What rail unions can do to help restore **prosperity** to the railroads . . . . . p. 38

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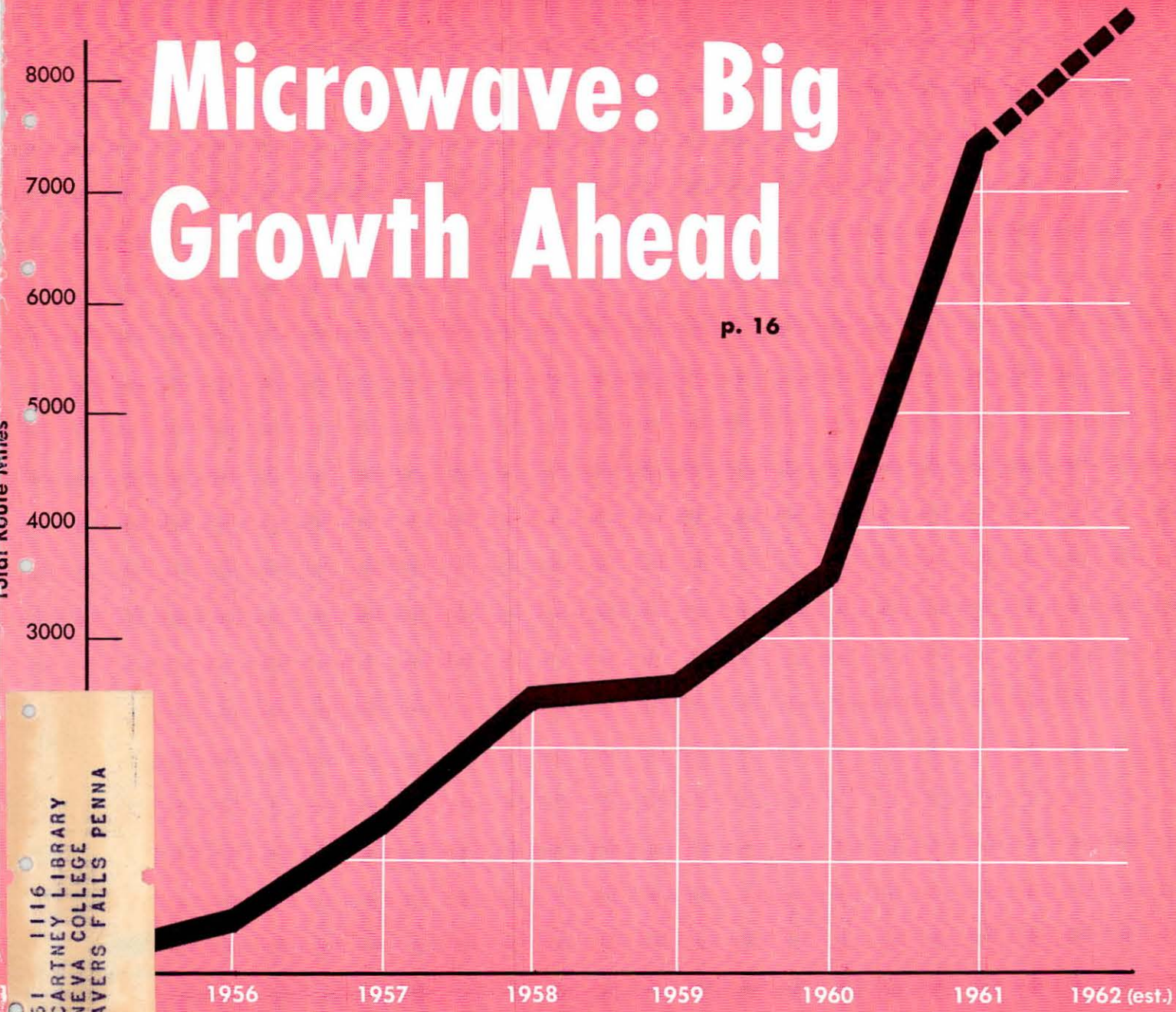
August 14, 1961

RAILWAY AGE WEEKLY

Microwave: Big Growth Ahead

p. 16



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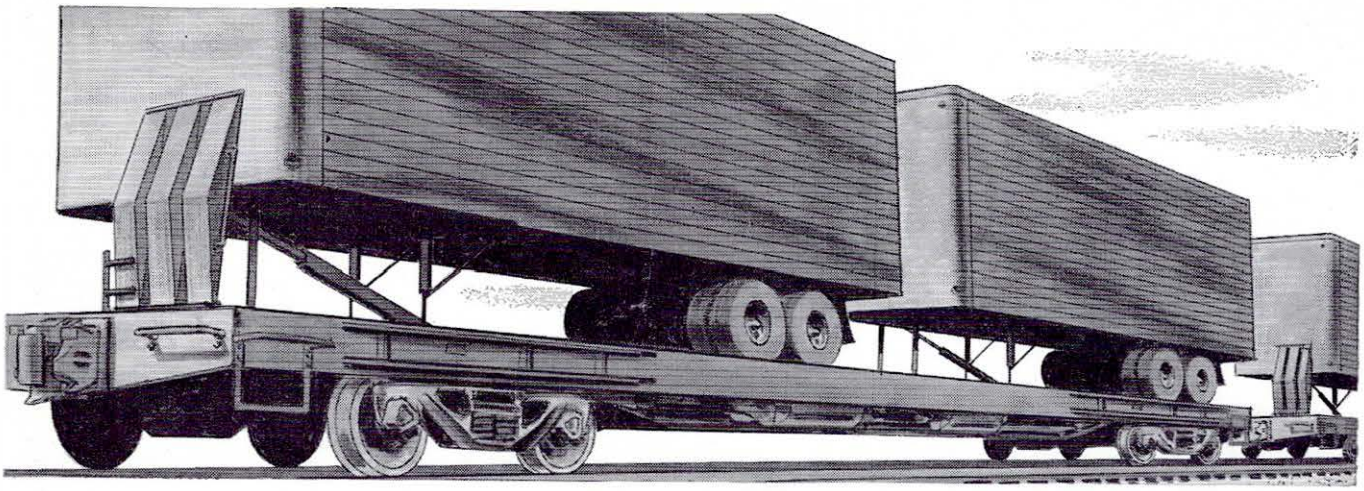

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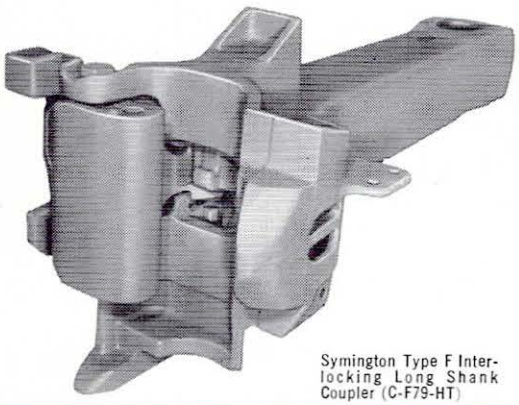
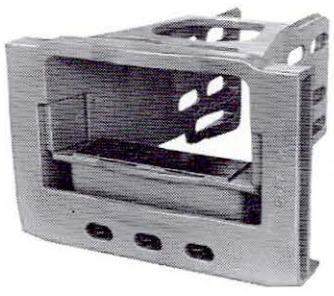
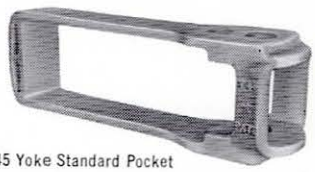


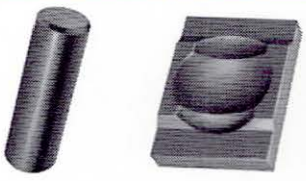
Symington Type F Interlocking Long Shank Coupler (C-F79-HT)



S-87 Striking Casting



Y-45 Yoke Standard Pocket



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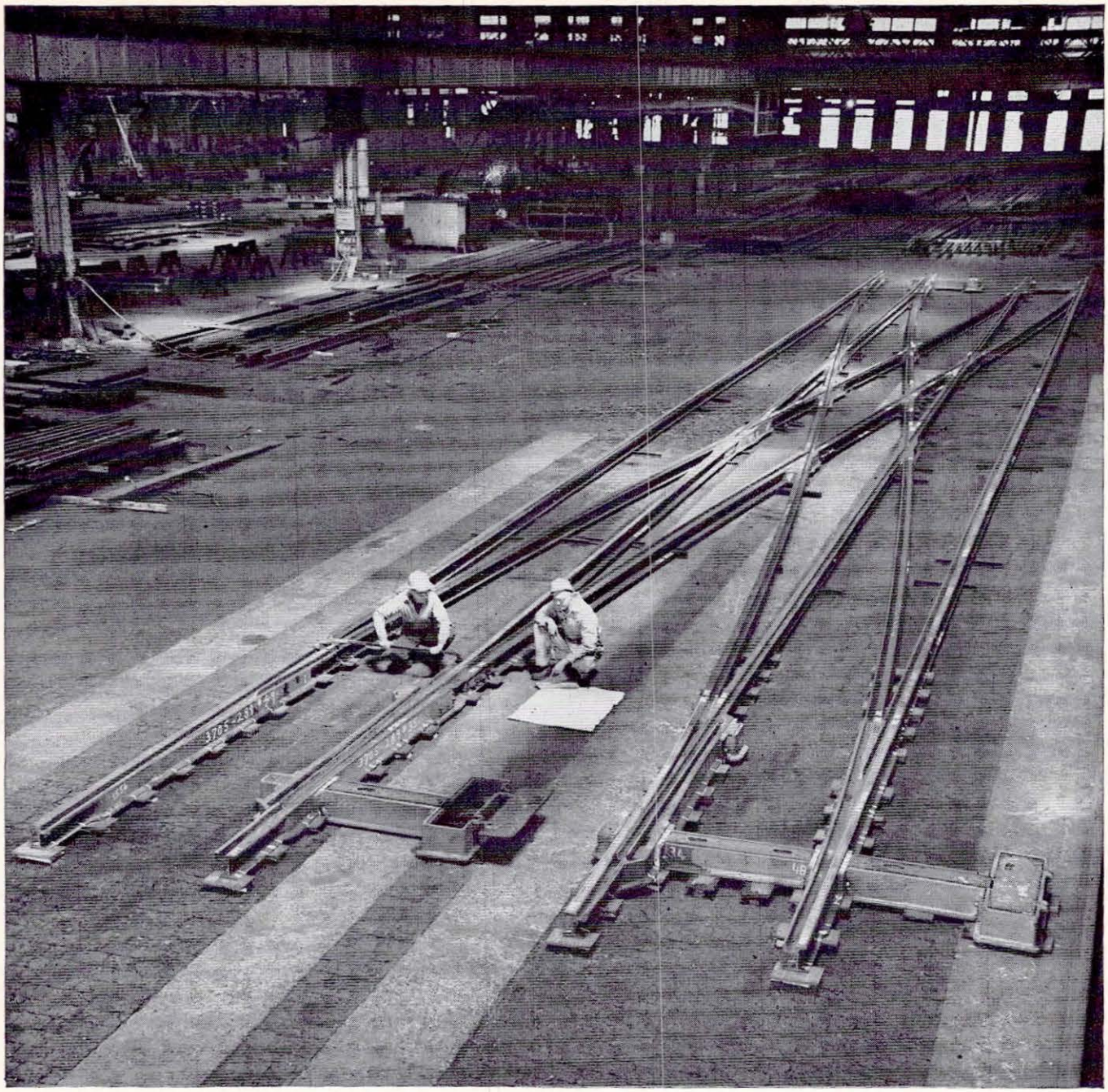

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For years now, many of us have been bemoaning legislative inequities that force the railroad industry to buy, maintain, and pay high taxes on private rights-of-way, while competition operates on open routes that are virtually government subsidized. *Maybe we've been bemoaning a situation that actually puts us a step ahead of competition —if we will only take the step.*

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Development of the completely automatic train is possible *now*, but it does not have to be accomplished in one move. It can be accomplished in stages, with each completed stage bringing its own immediate return in greater operating efficiency.

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RAILWAY AGE

WEEK AT A GLANCE

Aug. 14, 1961 • Vol. 151, No. 7

Railroads' June net best in eight months

Earnings of $43 million equalled the year-ago figure. While the overall picture is still gloomy, a gradual improvement in revenues seems to lie ahead .....p. 9

Wright charges U.S. aids foreign RRs, ignores own

While pouring millions of tax dollars into railroads abroad, says the AAR officer, the U.S. government is letting its own railroads die of neglect .....p. 10

Microwave: Big growth ahead

High capacity, economy and reliability of microwave may produce a six-fold growth—from 8,600 mi to 50,000 mi—in railroad systems in the next 10 to 20 years .....p. 16

NH trustees look for new revenues

A quick upsurge in passenger and freight traffic is needed, they warned last week, if the bankrupt road is going to continue to operate .....p. 18

Disneyland extends monorail

Disneyland's Alweg monorail system—first commercial operation of its type in America —has been tripled in length, and acquired three new four-car trains p.22

Spent atomic fuel moves by rail

Straight rail freight got the call over truck or piggyback movement for shipments of spent fuel elements from a Long Island laboratory to an Idaho reclamation plant .....p. 29

ICC suspends grain-rate cuts

Denial to the public—temporarily at least—of cheaper transport from better railroad technology is one result of ICC suspension of reduced grain rates in the Southeast p.32

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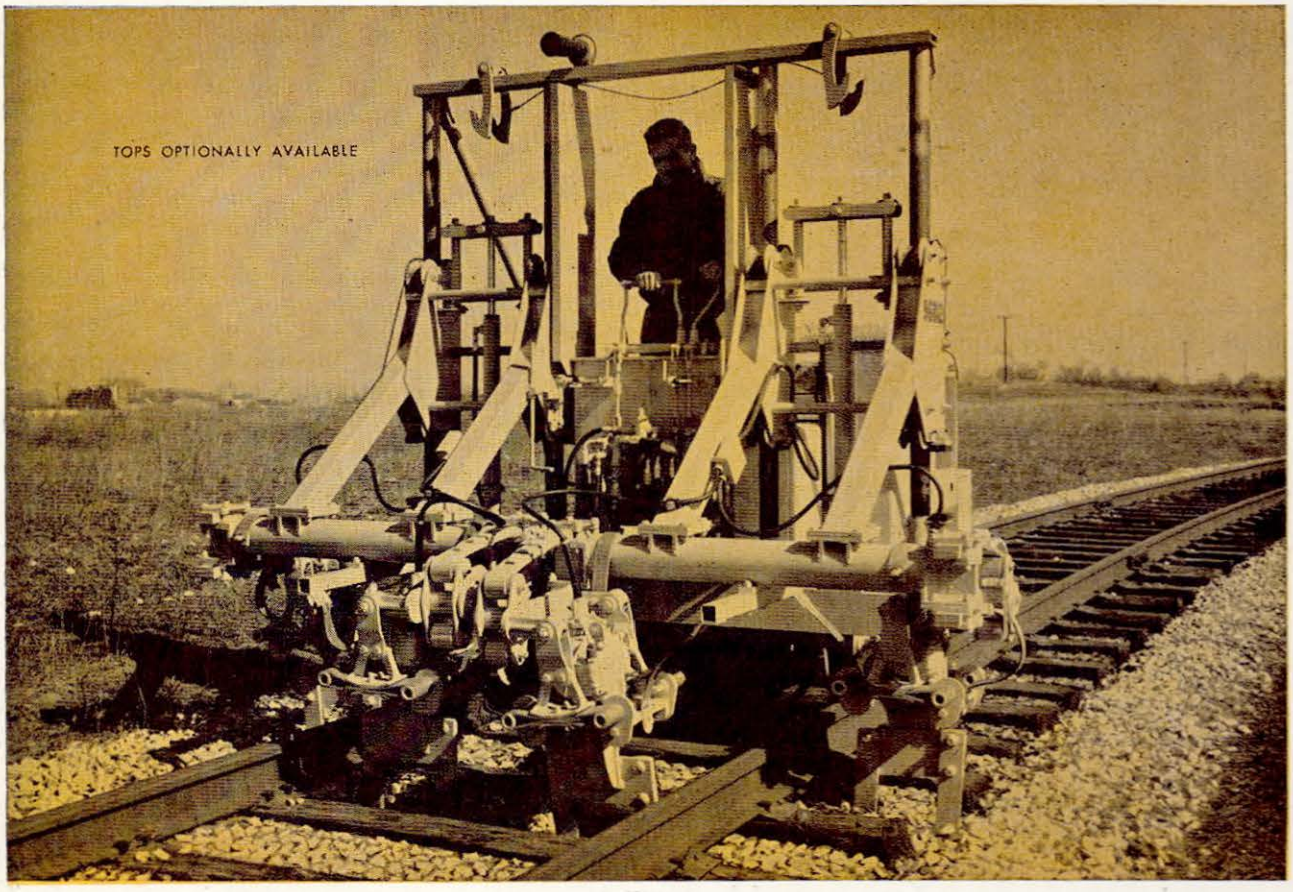

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MODEL 260: Equipped with Diesel engine, large, extra-capacity generator and 4 Vibratory Tamping units of the most powerful Jackson Track Maintainer type, this machine has maximum penetrating power in hard going, readily handles large ballast, badly fouled and cemented conditions. It's an excellent tamper for all work, in any kind or condition of ballast, whether it be jointing, smoothing, spot tamping and even surfacing when production tampers are not indicated or available. Very fast for new construction or any high lift work.

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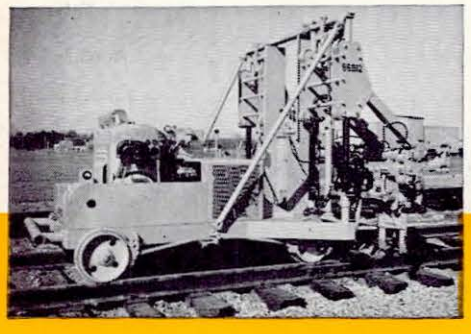

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WEEK AT A GLANCE

The Action Page—Challenge to rail unions

Railway unions could make a great contribution to the industry's prosperity if they would do what the Miners' Union did—and simultaneously reduce their own number .....p. 38

Short and Significant

N&W-NKP merger hearings will begin Sept. 27 . . .

before ICC hearing examiner Lester R. Conley. The proposed merger also involves purchase of the Pennsy's Sandusky line and lease of the Wabash.

A new container service . . .

was started Aug. 1 by Monon and Southern, providing third morning delivery of traffic out of Chicago destined for Jacksonville, Fla.

Immediate action by Congress . . .

to assist the transportation industry has been asked by the U.S. Chamber of Commerce, which is particularly concerned by the "critical financial situation" of common carriers.

Model of a fuel-cell-powered monorail . . .

will be shown at the National Chemical Exposition in Chicago Sept. 5-8 by the Electric Battery Co.'s Exide Industrial Division. Car will run on 13-ft oval track.

Results of a field investigation . . .

of Boston & Maine accounting procedures are now before the ICC and could lead to a general investigation, according to informed Washington sources.

Missouri Pacific has acquired . . .

a $1,000,000 "package" of C&EI securities. The purchase, including 22,600 Class A shares and 48,604 shares of common, gives MoPac a 14% voting interest in C&EI.

Current Statistics

Operating Revenues	
6 mos., 1961	$4,418,590,326
6 mos., 1960	4,889,904,452
Operating expenses	
6 mos., 1961	3,596,377,961
6 mos., 1960	3,840,346,580
Taxes	
6 mos., 1961	481,996,025
6 mos., 1960	542,719,599
Net railway operating income	
6 mos., 1961	145,968,212
6 mos., 1960	330,650,542
Net income estimated	
6 mos., 1961	60,000,000
6 mos., 1960	238,000,000
Carloadings revenue freight	
30 wks., 1961	15,765,545
30 wks., 1960	17,988,189
Freight cars on order	
July 1, 1961	11,821
July 1, 1960	29,555
Freight cars delivered	
6 mos., 1961	18,782
6 mos., 1960	31,402

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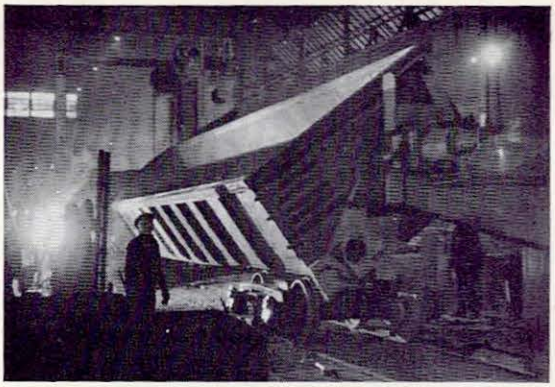

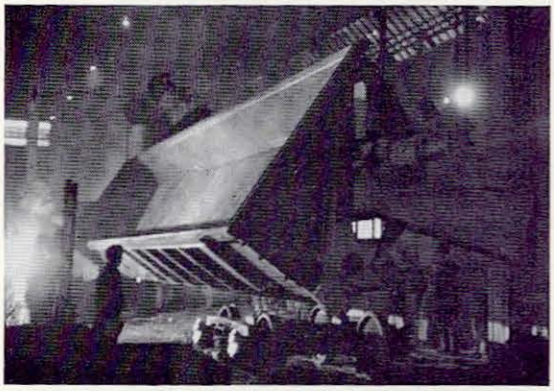

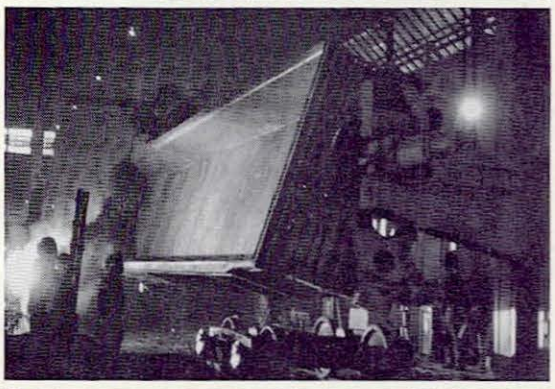

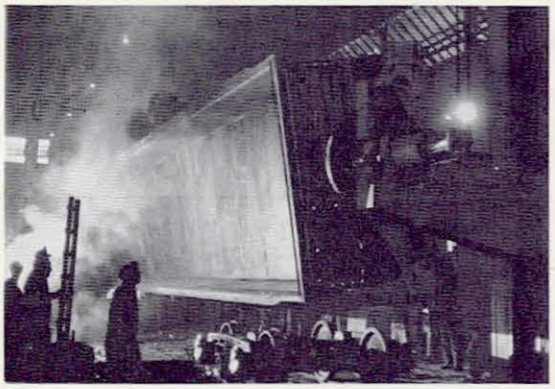

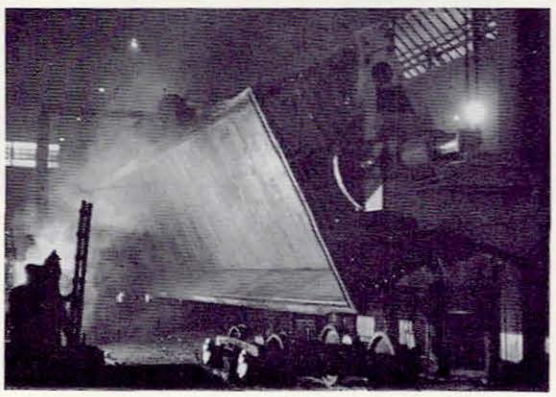

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Railroads' June Net Best in Eight Months

► The Story at a Glance: Railroads earned $43 million in June—their best monthly showing since last October's $55 million. But the earnings picture is still far from bright, particularly in the East. Hopes for a stronger recovery are pinned on a continuing upsurge in the national economy. Stepped-up defense expenditures aren't expected to make any great contributions to railroad revenues immediately, though stockpiling of basic defense materials like steel may provide some extra stimulus.

The earnings position of Class I railroads is still, in the euphemistic language of one Wall Street firm, "less than comfortable." But the news is beginning to get better.

June's net income of $43 million for Class I roads as a whole was the best in eight months. It equalled the June 1960 figure, and brought the first-half net up to $60 million. The figure isn't impressive when compared with 1960's first-half profits of $238 million and 1959's $307 million; it looks good only when viewed against the deficits piled up during the first four months of the year, when Class I roads as a whole operated in the red.

Even the hard-hit eastern roads managed to show a profit of $3,000,000 in June (though for the first half they were in the red by $74 million). Two major carriers—the New York Central and the Pennsylvania—broke into the black by narrow margins in June for the first time this year. NYC's net was $56,289; PRR earned $515,500.

Southern roads were better off, with a June net of $7,000,000, equal to the June 1960 figure. For the first six months of 1961 southern roads earned $29 million, against 1960's $43 million.

An even better showing was made by western roads, whose June net of $33 million compared with $25 million in June 1960. For the first half, western profits declined to $105 million from 1960's $130 million.

A sobering reflection for railroad men is that June's improved earnings performance wasn't solely attributable to higher revenues; in many cases the higher net came from slashed expenses, with a resulting increase in deferred maintenance.

There seemed to be general agreement last week that better times lie ahead; how much better, and how far ahead, were the big questions.

A cautiously optimistic view was taken by the Value Line Investment Survey, which estimated that Class I roads would earn $500 million during the 12 months between June 1961 and June 1962—just about double their earnings during the year ended with June 1961.

If the current business recovery passes the railroads by as did the 1959 recovery, the Value Line commented, the New Haven may have some company in the bankruptcy courts—but Value Line doesn't think this will happen: "We continue to look for a pickup in traffic in the current half that will result in favorable year-to-year earnings comparisons for both the third and fourth quarters. It also appears probable that the first half of 1962 will be considerably better than the six-month period which just ended."

What effect increased defense expenditures will have on the industry is still a matter of some conjecture. One eastern traffic executive expects some added traffic to show up by late this year or early 1962, but points out that effects of higher government spending probably won't be as widely felt in terms of traffic as it has been during previous defense crises. As he puts it: "Under World War II conditions it could be pretty safely estimated that X dollars in defense expenditure would be converted into enough tanks, guns, trucks and other materiel to fill a freight train. Today the same amount of money may go into electronic components that might fill one or two cars."

The stockpiling of materials—either for defense itself or as a safeguard against defense-caused shortages—may produce a more immediate effect. Chesapeake & Ohio, for example, looks for an upturn in steel loadings as a direct result of the defense build-up, with an attendant increase in coal loadings.

July earnings for most roads still weren't in last week. One early reporting road, Illinois Central, reported July profits of $1,053,000, compared with $393,355 in 1960. IC's seven-months net of $5,869,826 also surpassed the comparable 1960 figure—$4,969,635. C&O reported earnings of $1,450,000 in July, compared with $2,061,000 in July 1960. C&O's seven-months net of $11,322,000 this year compared with 1960's $23,109,000.

Revenues and Expenses, Class I Railroads

	JUNE		
	1961	1960	1959
Total operating revenues	$ 796,366,373	$ 824,448,260	$ 899,760,661
Total operating expenses	613,588,862	644,166,147	674,200,622
Taxes	89,715,051	92,287,800	108,138,200
Net railway operating income (Earnings before charges)	59,367,061	57,110,972	89,306,341
Net income, after charges (estimated)	43,000,000	43,000,000	73,000,000
	6 MONTHS ENDED JUNE 30		
Total operating revenues	$4,418,590,326	$4,889,904,452	$5,025,454,654
Total operating expenses	3,596,377,961	3,840,346,580	3,904,047,540
Taxes	481,996,025	542,719,599	546,801,508
Net railway operating income (Earnings before charges)	145,968,212	330,650,542	413,621,685
Net income, after charges (estimated)	60,000,000	238,000,000	307,000,000

Wright Charges U.S. Aids Foreign RRs

► **The Story at a Glance: The U. S. government is permitting its own railroads to die of malnutrition while it pours millions into foreign rail systems, AAR Vice President J. Handly Wright charged last week. U. S. roads don't want any part of this international handout, said Mr. Wright—but they do want the freedom to do their job efficiently. Enactment of the industry's "Magna Carta" program, said the AAR executive, would permit the railroads to spend an extra $2 billion a year on materials and supplies, thus creating up to 400,000 new jobs.**

For a Los Angeles audience last week, the AAR's J. Handly Wright described "a strange case of reverse myopia in Washington."

It was the denial of an application for a government disaster loan of $5.5 million, he recalled, that sent the New Haven into bankruptcy.

"Yet, while allowing our own railroads to die from excessive blood-letting, the United States has shown great solicitude for the railroads of other countries," Mr. Wright told a meeting of the 3,000-member Town Hall civic group.

"Our government has provided more than $1.2 billion in loans and grants to foreign railroads since World War II through the International Cooperation Administration, the Development Loan Fund and the Export-Import Bank. Another $970,000,000 has been loaned to foreign railroads by the World Bank of which the United States is the biggest shareholder of the 59 shareholder nations. . . .

"A scant two weeks after the New Haven went bankrupt, the World Bank announced a loan equivalent to $80 million to the Japanese National Railways for a new line to link Tokyo with Osaka. . . .

"A couple of days after announcement of the loan to the Japanese railway, the Export-Import Bank announced authorization of two loans of $3.5 million each to the Government of Iran for the purchase of diesel-electric locomotives and road building equipment. . . .

"Here we have a government that sees railroads of such vital importance to other countries as to deserve millions of U.S. tax dollars, but can't shake off its lethargy to extend simple equality of treatment to American railroads."

U. S. railroads, said Mr. Wright, aren't applying for "similar largess from government. All we want is some

WATCHING WASHINGTON WITH WALTER TAFT

Mr. Taft is on vacation. During his absence, this column is being written by other members of the staff.

• **APPLICATION** of the Norfolk & Western and Chesapeake & Ohio to purchase Island Creek Fuel and Transportation Co., a coal-hauling barge line operating on the Ohio River, has drawn fire from the American Waterways Operators, Inc. AWO has protested the proposed acquisition and has filed petition with the ICC for leave to intervene.

THE RAILROADS HAVE ASKED the Commission to authorize them "to acquire, own, control, and operate certain [Island Creek] properties" through Norfolk Chesapeake Transportation Corp., a jointly-owned subsidiary they propose to establish for this purpose. The barge line in question is a wholly-owned subsidiary of Island Creek Coal Co. and engages primarily in hauling coal for its parent company, with some contract business from other coal shippers.

THE RAILROAD APPLICATION notes that, while they propose to operate the barge line as a noncertified water carrier primarily engaged in the transportation of coal which has had a prior rail haul either on the N&W or C&O, other bulk commodities may also be transported, particularly in back-haul movements. The railroads also state that they propose to carry on the business of a water carrier on the Ohio River "and other inland waterways" (Island Creek's operations are now confined to the Ohio River).

AWO FEARS that, in proposing to operate the barge line as a non-certified carrier, the railroads would be free to engage in transportation over any of the inland water channels in performance of service in bulk commodities which are exempt from economic regulation under the Interstate Commerce Act. The Association also maintains that the railroads have not shown a public need for such a service and that such a railroad-controlled operation could draw other cargoes away from established barge lines.

AWO ALSO INSISTS that the application by the two railroads is important enough to warrant the attention of the "entire Commission" and not to be handled by "a Board or a single Division, on appeal or otherwise."

MEANWHILE, in another barge line acquisition proposal in which the Illinois Central and Southern Pacific are seeking approval to purchase the John I. Hay Co. barge line, oral argument has been set before the full Commission on Sept. 12. AWO has also protested this application and a hearing examiner has recommended against approval of the proposed purchase.

• **HEARINGS RESUMED** on schedule Aug. 8 on S. 1197—the "Hoffa Bill"—with testimony against the proposed legislation by C&NW Chairman Ben W. Heineman. The hearings were scheduled to continue throughout the week, with an ICC spokesman slated for Friday.

Ignores Own

measure of equality of treatment and an opportunity to provide the progressive, efficient and low-cost service a dynamic and growing American economy demands."

The railroads have already blueprinted this need for Congress in their "Magna Carta for Transportation," said Mr. Wright.

"The 'Magna Carta,'" he said, "would put all carriers on a more even competitive footing, allowing each to grow on the basis of its own abilities and not on the basis of those built in by government subsidies and favoritism."

The need for such a legislative program is pointed up by the current defense crisis, said Mr. Wright.

Railroads have long been warning that their reserve capacity was seriously depressed by the consequences of "long-overdue legislative relief of government caused inequities," he reminded his audience.

The industry faces the present emergency, he added, with 48% fewer passenger-carrying cars than during the Korean War and 51% less than Pearl Harbor.

What would be the practical effects of enactment of the "Magna Carta" program?

Congressman Van Zandt of Pennsylvania, noted Mr. Wright, has estimated that 90,000 railroad jobs would be restored if the railroad share of intercity freight increased from 1960's level of 44% to 50%, and that another 10,000 railroad jobs would be added if the rails' share of intercity passenger traffic increased from the present 27% to 35%—a total of 100,000 new railroad jobs.

Higher railroad purchases would create an estimated 100,000 jobs within the rail supply companies and "some authorities say that figure would be tripled as purchases by rail supply companies spread to their suppliers."

"In summary," said Mr. Wright, "there are a measurable 400,000 jobs that would result directly from enactment of 'Magna Carta' legislation." In addition, there would be "the flow into the economy of at least $2 billion extra annually for rail materials and supplies; savings in personal taxes through having commercial transportation pay its full share of the cost of building and maintaining highways, waterways and airports; and overall, of course, a national transportation system that is self-supporting, and economically balanced to offer the public the rewards and consumer attractions of services under full and fair competition."

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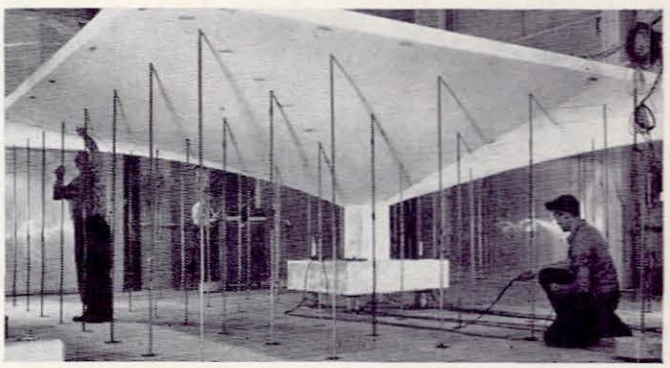
Sixty concrete shells—each 16 ft. square and with the distinctive double curvature of the hyperbolic paraboloid—form this Lakeland, Florida, passenger shelter. The repeating shells, precast on the site and erected on concrete columns, provided significant savings.

The unique geometry of the hyperbolic paraboloid produces curves that are developed entirely from straight lines. No bending or curving of form lumber required. Forms are inexpensive—and with repeated use just a few are needed. For this attractive shelter, the $1.65 per sq. ft. cost included the roof, columns, footings and drainage!

Today, progressive railroads are finding that modern concrete provides new beauty and construction economies along with the time-tested advantages of durability, fire safety and low upkeep. Write for free literature. (U.S. and Canada only.)



PCA lab tests show strength of concrete shells. Here, engineers subjected a 24-ft. square by 1½-in. thick shell to 13½ tons total downward load—applied by jacks beneath the floor.

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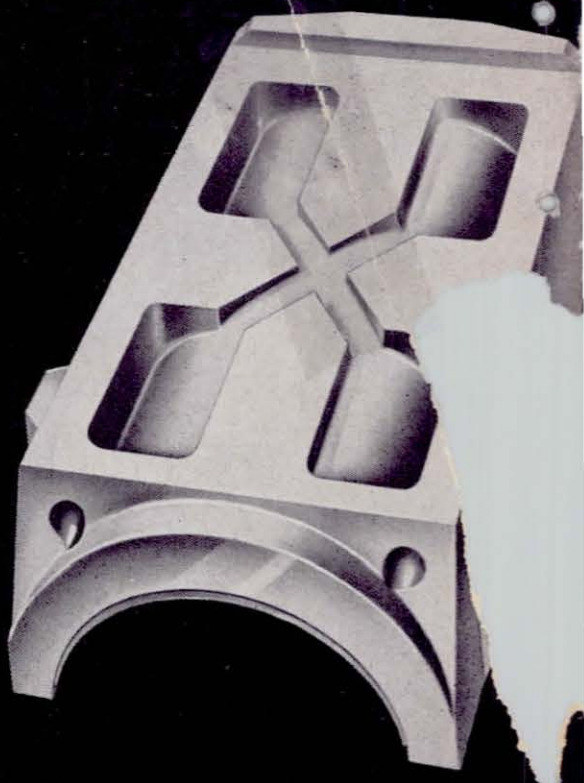
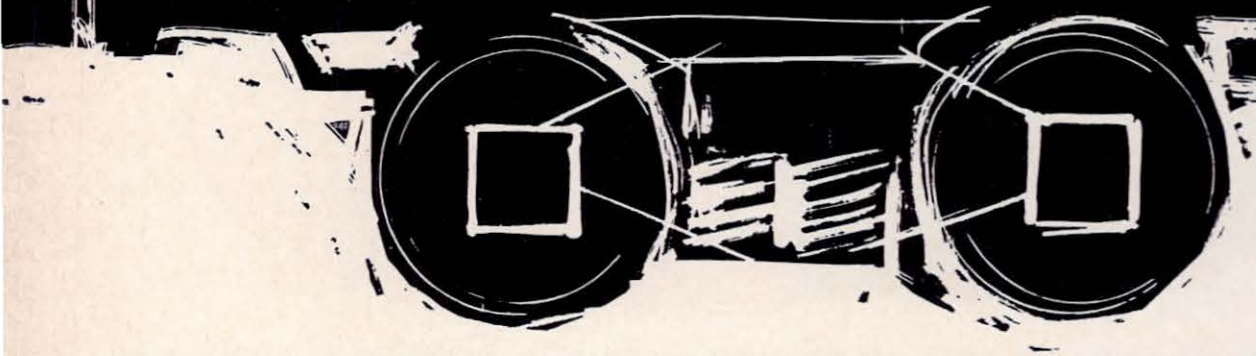


Positive control flatback bearing† achieves stabilized journal assembly without any alteration or modification of box. It has established an impressive record for longer life and fewer hot boxes.



†AAR approved for limited application for test in interchange service.

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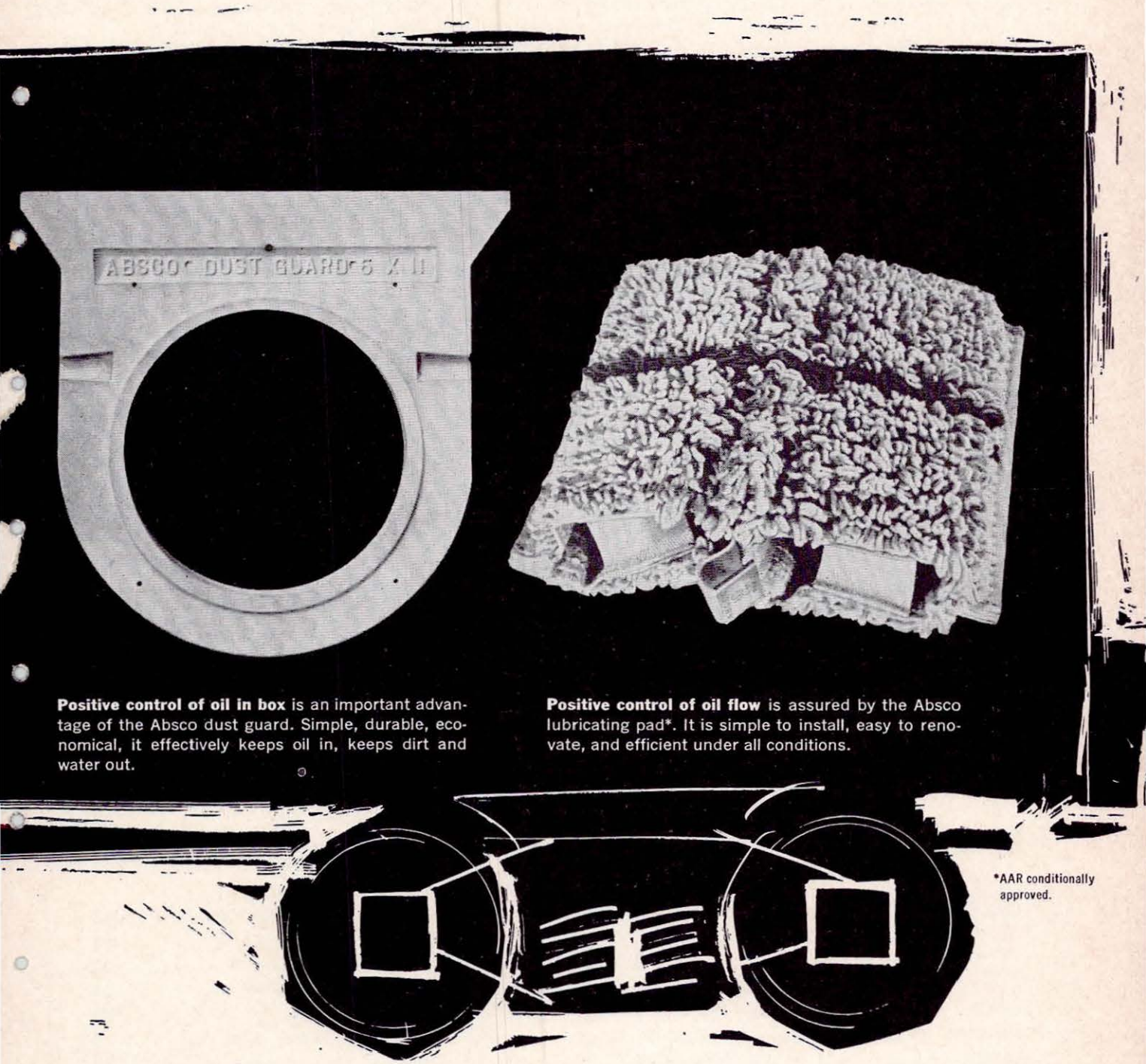

Positive control of oil in box is an important advantage of the Absco dust guard. Simple, durable, economical, it effectively keeps oil in, keeps dirt and water out.

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Microwave: Big Growth Seen

By ROBERT W. McKNIGHT
Signal & Communications Editor

► **The Story at a Glance: Railroad microwave systems in service or under construction now total 8,602 route-miles. Another 8,000 miles are in various stages of planning. The future looks bright for microwave because of its rapid acceptance as a high-capacity, economical, weather-proof communications medium.**

Last week (RA, Aug. 7, p. 36), the Union Pacific ordered microwave equipment to be installed on the Laramie, Wyo.-Salt Lake City, Utah, section of a mainline system joining major UP offices. This 400-mile link is in addition to a 563-mile Laramie-Omaha system now in service, and a 184-mile Portland-Hinkle, Ore., system under construction.

Railroad microwave communications systems, in a decade or two, may total 35,000 miles in the United States and 15,000 in Canada.* This prediction is based upon microwave's rapid acceptance as a high-capacity, economical, weatherproof communications medium. American railroads have 8,602 (microwave path distance) miles of microwave in service or under construction, and 3,479 miles in the planning stage. In addition, approximately 5,000 miles of microwave systems are well along in the planning stage, but the railroads concerned are reluctant to talk about them. Several of these systems are complete as to path surveys and specifications. They are pending management approval for funds.

At the present time, majority opinion favors microwave for through communications and pole lines for local communications and signal circuits.

The ever-increasing need for railroad communications for data transmission, intercity telephone dialing and VHF radio controls is the strongest impetus for microwave. This need for more communications, plus the advantages of microwave, make for steady growth of this communications medium.

Advantages of microwave are:

- Great immunity to adverse weather conditions such as rain, snow and sleet.
- Inherently greater bandwidth and essential freedom from external effects, thus providing a high quality signal. Microwave can provide channels with 250 kc bandwidth that are required for fast facsimile transmission.
- Inherently large capacity. Systems now available are capable of handling up to 600 voice channels.
- Control of VHF radio stations over microwave channels. As many microwave stations have high towers or are on mountain tops, these stations can be used for VHF station sites, extending the range of VHF radio communications.

Further railroad microwave growth is seen as a result of Federal Communications Commission actions. The FCC, in its microwave ruling last October, reaffirmed its support for private microwave systems. "Our considered judgment is that there is an adequate frequency band to sustain a liberalized policy for the licensing of private microwave systems," the Commission majority said. One informed opinion held that the FCC would continue its policy of licensing point-to-point railroad microwave systems (RA, Oct. 31, 1960, p. 62). Also, the Commission has proposed amendments to pertinent rule sections relating to privately own-

*CNR and CPR are communications common carriers in Canada.

Railroad Microwave In Service or Under Construction

		Miles
ALASKA	Anchorage-Portage, Alaska	50
AT&SF	Beaumont-Galveston, Tex.	68
"	Williams-Wickenburg, Ariz.	94
"	Barstow-Bakersfield, Cal.	141
"	Los Angeles, Cal.-Winslow, Ariz.	581
"	Crestline-Cushenbury, Cal.	47
"	Argentine, Kan.-Amarillo, Tex.	567
CNR	Sydney, N.S.-St. John's, Nfld.	574
"	Grande Prairie, Alta.-Mt. Dave, Yukon	1,185
CNR-CPR	Toronto-London-Windsor, Ont.	309
"	Montreal, Que.-Moncton, N.B.	543
"	Spurs in Quebec	184
CPR	Vancouver-Nanaimo, B.C.	40
CRI&P	Goodland-Phillipsburg, Kan.	135
D&RGW	Ogden, Utah-Denver-Pueblo, Colo.	702
DM&IR	Aurora, Minn.-USAF Radar Gap Filler	5
M-K-T	McAlester-Muskogee, Okla.	62
NYC	Avon-Indianapolis, Ind.	12
ONR	Otter Rapids-Little Long Rapids, Ont.	27
PGE	Vancouver-Dawson Creek, B.C.	750
PRR	Phoenixville-Reading, Pa.	25
QNS&L	Sept Isles-Schefferville, Que.	400
SOU	Adel-Valdosta, Ga.-Live Oak, Fla.	211
"	Washington, D.C.-Atlanta, Ga.	657
SP	Dunsmuir-Black Butte, Cal.	23
UP	Omaha, Neb.-Salt Lake City, Utah	1,026
"	Portland-Hinkle, Ore.	184
		8,602

PLANNED

AT&SF	Winslow, Ariz.-Amarillo, Tex.	663
"	Argentine, Kan.-Chicago, Ill.	450
C&NW	Chicago-West Chicago, Ill.	30
CMStP&P	Union Station-Bensenville, Ill.	55
NYC	New York-Chicago	960
"	Toledo, Ohio-Detroit, Mich.	58
"	Cleveland, Ohio-Indianapolis, Ind.	283
RDG	Weston-Manville-Port Reading, N.J.	20
StL-SF	Birmingham, Ala.-Kansas City-St. Louis-Tulsa	1,000
		3,479

Ahead

ed and operated point-to-point microwave systems. The Commission said its proposals involve: "Removal of the developmental restriction on those bands for which interim technical standards have been established, thus enabling the Commission to issue authorizations on a regular basis. . . .

"Having adopted the interim technical standards" for private microwave, the Commission said, "the developmental limitation on the frequencies governed by these standards appears to be unnecessary."

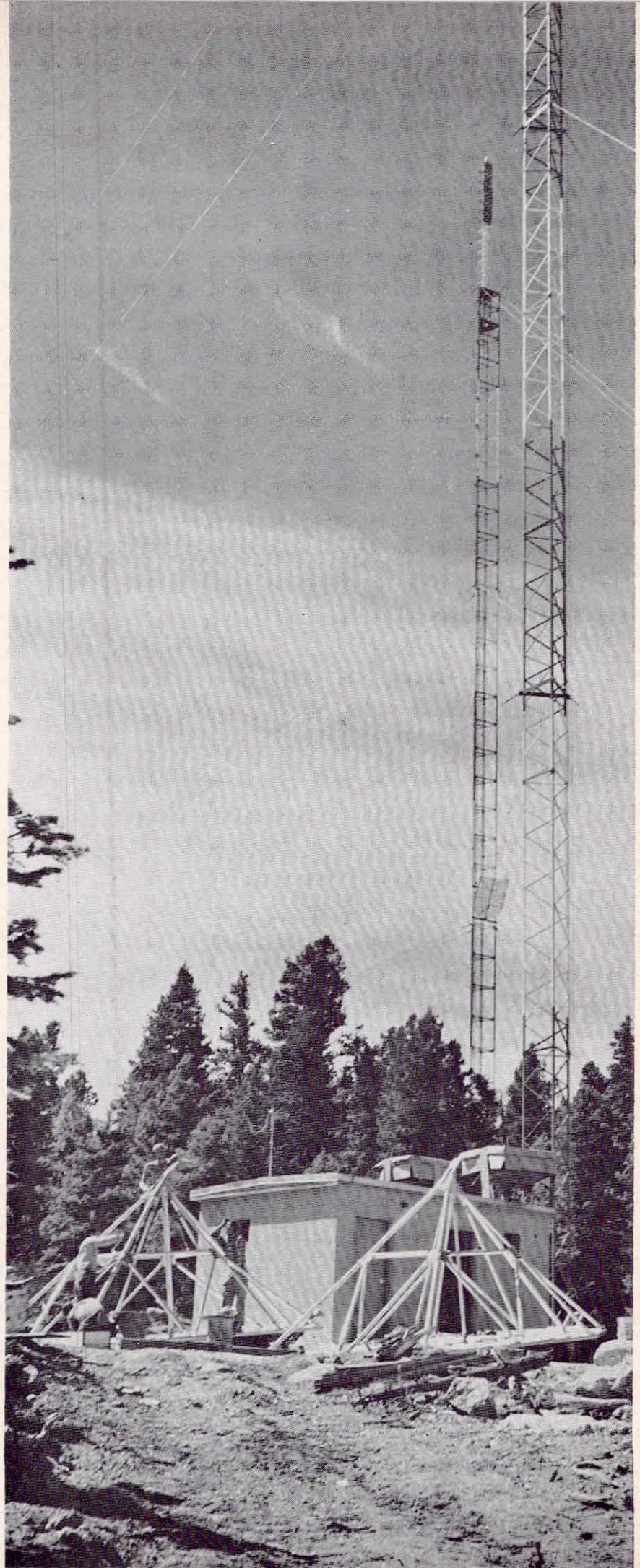
To meet private microwave system competition, American Telephone & Telegraph Co. has offered its Telpak service (RA, May 15, p. 56), which is intended to give large communications users, such as railroads, a choice between common carrier services and private microwave systems.

Soon after its inception, a question of interpretation of the Telpak tariff arose between the FCC and AT&T. The telephone company contends that the tariff correctly describes a service to be performed and not how the service should be provided. AT&T desires to use its facilities in the manner best suited to provide Telpak service. On the other hand, the FCC contends that AT&T cannot derive Telpak channels by selecting individual channels from various routes and facilities. Telpak channels must be derived from a single broadband facility. (For example, all Telpak channels for a customer must come from the same carrier.

The Commission backed its contention with an order, with which the phone company has complied. Last week AT&T filed a Telpak tariff modification, "designed to eliminate any possible misunderstanding as to how the service will be furnished, and to allow AT&T to furnish Telpak by whatever facilities the company may find most appropriate." The tariff modification is to go into effect Sept. 8.

The net result of this action on Telpak, according to informed sources, is that while some railroads are making use of it, Telpak usage is not as great as had been anticipated. Many roads are taking a "wait and see" attitude. Meanwhile, other U.S. railroads are continuing their microwave construction programs.

Microwave system construction has averaged 2,500 route-miles during the last two years. This rate, which might well continue, should bring about the predicted 35,000 route-miles of microwave in the U.S. and 15,000 miles in Canada within the next two decades.



NH Trustees Look for New Revenues

New Haven trustees last week began a search for cash to keep the bankrupt road in operation. They indicated that they hoped to find it in increased passenger and freight revenues.

In a somber statement issued from the railroad's New Haven, Conn., headquarters, the court-appointed trustees warned that "even with the additional loan of $5 million [guaranteed by the ICC] it will not be possible to carry on very long unless we can find ways and means to improve immediately our cash working balance."

The trustees went on to ask that "a special effort be made by all concerned to increase freight and passenger patronage."

"Unless we can have a substantial increase of revenues during the reorganization period," they said, "it will be difficult for us to take badly needed steps to improve service and equipment and even to continue operations."

The trustees are Richard J. Smith, a New York lawyer and former New Haven director; William J. Kirk, head of a Boston investment firm; and Harry W. Dorigan of Plainfield, N.J., former traffic vice president of the Central Railroad of New Jersey. It's understood that Mr. Dorigan will handle the day-to-day administrative work of the railroad, maintaining his office at the road's headquarters.

In their initial public statement, the trustees emphasized the gravity of the problems confronting the road: "None of them is easy of solution and we will need the forbearance and patience of all concerned."

The first problem, they said, is "to determine quickly what must be done to put operation of the railroad on a basis which will produce income in excess of the current expenditures required."

Even as the trustees' statement was being drafted, there came some hope of help from an important quarter. The Connecticut Chamber of Commerce announced appointment of a committee comprised of 24 of the state's leading businessmen—including three industrial traffic managers—to seek new freight and passenger traffic for the railroad.

In an area where considerable traffic has been diverted to highways, the potential for its return to the rails is considered high, even though, as a leading Connecticut industrial traffic man points out, "much of the heavy tonnage from which the New Haven once benefitted, such as anthracite coal, has disappeared."

Purpose of the Chamber of Commerce committee is to "keep the public informed in terms the public can understand." The hope was expressed that these efforts in turn would result in some restoration of traffic, but "it is still too early to tell."

Meantime, John B. Hedges, traffic manager of the Manufacturers Association of Connecticut, told Railway Age that his association, too, is "continuing its efforts to get traffic back on the railway." The New Haven's freight service "has improved," he added, but the passenger deficit still hurts.

RAILROADING AFTER HOURS WITH JIM LYNE

"WHO IS JOHN GALT?"—This is the question a bashful reader (he didn't sign his name) has put to me. He typed it across the top of page 38, torn out of our July 17 issue. The page was headed "NH an Omen or a Warning?" and had to do with the likelihood that one big railroad's bankruptcy may be only the first of a series.

I know the answer to my shy reader's inquiry. John Galt is the hero of the novel "Atlas Shrugged," by Ayn Rand. By profession he is portrayed as a railroader, and on the side he is a kind of superman, getting ready to take over the country when the "welfare state" goes busted.

My mysterious questioner appears to believe that it's about time for a strong-man type to move in on the railroads. I'm told that, in the bad old days of "banker control," when railroad executives had trouble agreeing with each other, the Elder Morgan used to get them together and discourage them from going home until their differences were amicably settled.

SECRETIVE TRAFFIC MANAGER—I was surprised to note that an industrial traffic manager, speaking for the National Industrial Traffic League, has testified in opposition to the proposed Census of Transportation. He seems to believe that private transportation is strictly the haulers' own business—although they do their hauling on property provided and maintained by government. And railroads (which do their business on private property) are required to give complete details on every pound of freight they carry.

Anti-socialist that I am, nevertheless the collection and analysis and publication of significant statistics on population and production have always seemed to me to be natural and proper functions of government. (Government's legitimate sphere is to perform those essential services that private enterprise can't do as well or can't do at all.)

RELIABILITY, ABOVE ALL—The future of the British railways may lie in their ability to make their freight service more reliable. Such is the opinion of the usually well informed "Economist" magazine.

"It is reliability, rather than speed and cheapness, that seems to be the decisive factor in competition between road and rail," says the magazine. It adds, however, that "mounting congestion" on the highways may make retention of "an extensive railway network" necessary, whether it can pay its way or not.

NEW REVENUE SOURCE?—The suggestion that a service may be economically indispensable, even though it cannot pay its way from charges levied on customers, is a relatively novel notion. It may be important.

The implication is that the service has value to other people besides its direct customers. If that is actually true then there would be nothing especially evil or unorthodox in asking these indirect beneficiaries of the service to defray a part of the total cost. This seems to be the argument for community contributions (e.g., tax exemption) to help keep railroad commuter service going—since, without such service, the communities would be confronted with even greater expense to build more highways and parking facilities.

From this point of view, railroads have been subsidizing these communities; and the suggestion now is that they discontinue these subsidies.

The railroads asked for

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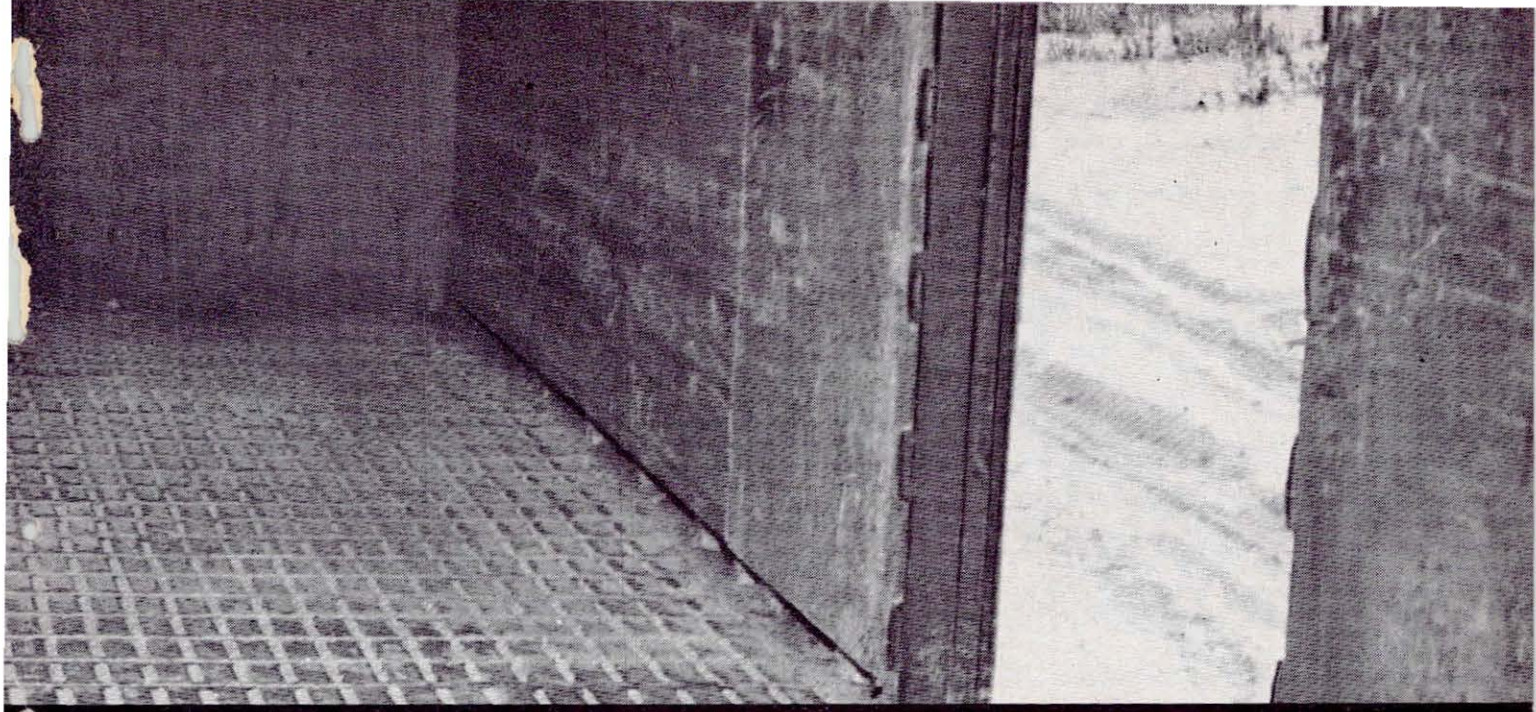

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Unretouched photograph of flooring in MILW boxcar 28280

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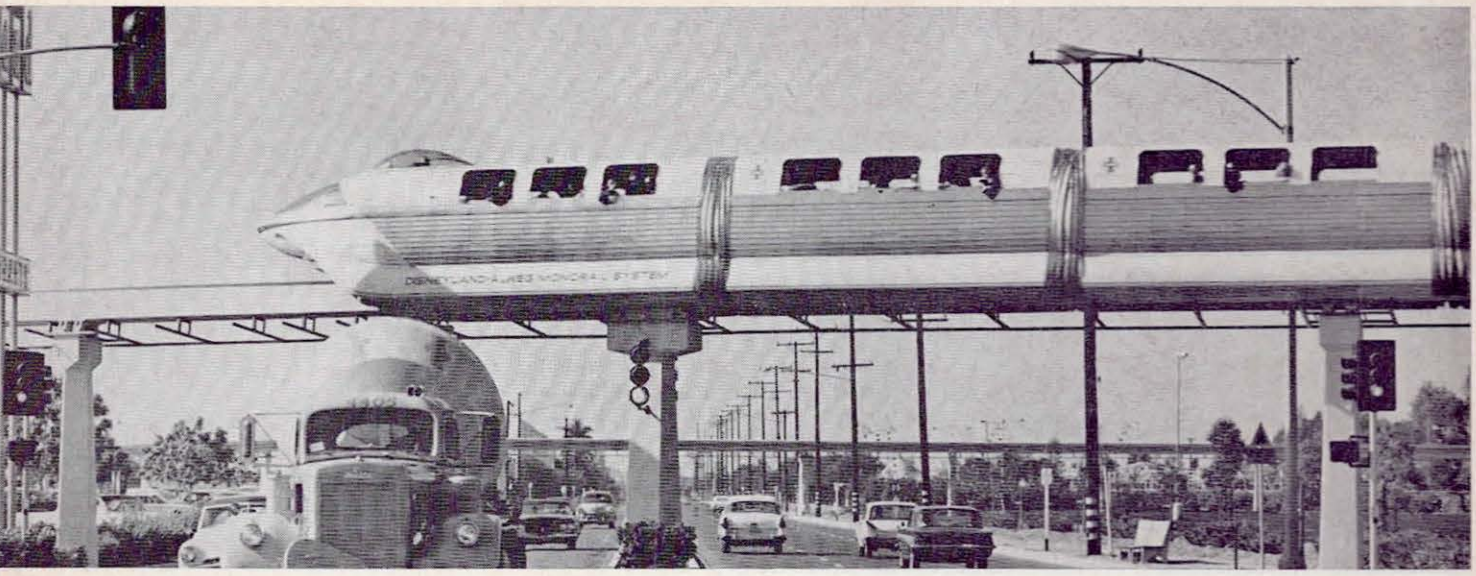

NEW MONORAIL EXTENSION at Disneyland crosses busy West Street in Anaheim, Calif.

Disneyland Extends Monorail

Disneyland has more than tripled its monorail facilities. The Disneyland-Alweg monorail system, first passenger-carrying monorail to operate daily in America, now connects the Anaheim, Calif., park with the Disneyland Hotel. The new 8,767-ft beamway extends the system to a total length of 12,300 ft, not including 900 ft of beamway from the main line into the monorail servicing area and the switch from the main beamway onto the spur track.

The new monorail extension, including three new four-car trains, was scheduled to go into regular daily service recently. One-third of the approximate $2-million cost has been underwritten by the Disneyland Hotel. This brings the total cost of the system to $3.3 million (the original monorail and train equipment previously in use inside the park having cost $1.3 million). The $3.3 million figure includes engineering design and development work; site preparation; construction of about 2½ miles of beamway and pylons; and passenger stations, cars and their component parts.

The system has been designed and engineered for a speed of 45 mph, although the equipment, if used for metropolitan transit, is said to be capable of speeds up to 80 mph on long straightaways. The new line extends along Harbor Boulevard in Anaheim and across the Disneyland parking lot.

The three new trains have a capacity per train of 106 seated passengers, compared with 82 per train for those previously in use. The initial trains, in use at Disneyland since June 1959, have carried 4,370,000 passengers, a total of more than 60,000 miles.

In operation, the undercarriage of the trains straddles the beams in such a way that the drive and braking wheels run on the top surface of the beamway, and the guiding and stabilizing wheels contact both lateral surfaces of the beam. These wheels, eight rolling in a horizontal plane and four rolling in a vertical plane, are connected together by means of a welded steel frame, the complete assembly being called a "bogie." All tires are rubber.

The monorail operates on 600 volts of direct current transmitted along a pair of copper and steel bus-bars mounted between the flanges on the right side of the beam. Each train is powered by six 55-hp, d.c. traction motors. Two motors, one for each set of drive wheels, are mounted on either side of the second, third and fourth bogie of the train's five bogies. Current is picked up from the lower, positive bar by carbon brushes mounted on the first and second bogie of each train, passed through the motors and returned to the upper, negative bar by identical brushes mounted on the third and fourth bogie. The d.c. motors, providing high torque at low rpm, in conjunction with the high friction value of rubber tires on a concrete surface, permit rapid acceleration. Dynamic braking is used to supplement the highway bus-type air brakes.

The forms used in casting individual reinforced concrete supporting beams are steel shells which can be adjusted to produce curving, twisting concrete girders. Most of the beams on the Disneyland-Alweg monorail range in length from 32 to 42 ft. Beams of this length measure 20 in. wide by 34½ in. deep and have a design strength of 5,000 lb. per sq. in. However, 50 beams, each 60 ft. long and weighing 23 tons, were used on the straightaway along Harbor boulevard and across the parking lot. To maintain the design strength in these beams, it was necessary to increase their depth to 40 in. Where short and long beams were used together, haunches, adding the needed 5½ in. of depth, were cast on. The beamway height ranges from 31 ft. along Harbor boulevard, as the trains re-enter Disneyland, to a low of 5 ft. in a non-public area, alongside Matterhorn mountain.

The monorail at Disneyland is an Alweg system which has been adapted to the particular requirements of Disneyland by the Alweg Corp. and WED Enterprises, Inc., the design organization for Disneyland. Alweg has been operating its test monorail near Cologne, Germany, since 1952. The beamway on the monorail in Cologne is on a long curve approximately one mile in length. Disneyland Alweg joined together in the summer of 1958 to develop the basic system into a working prototype for operational use at Disneyland. Disneyland, Walt Disney Productions and WED Enterprises do *not* have royalty rights if the Alweg System is developed for public transit. However, the Disney interests will participate if the Alweg System is utilized in recreational situations.

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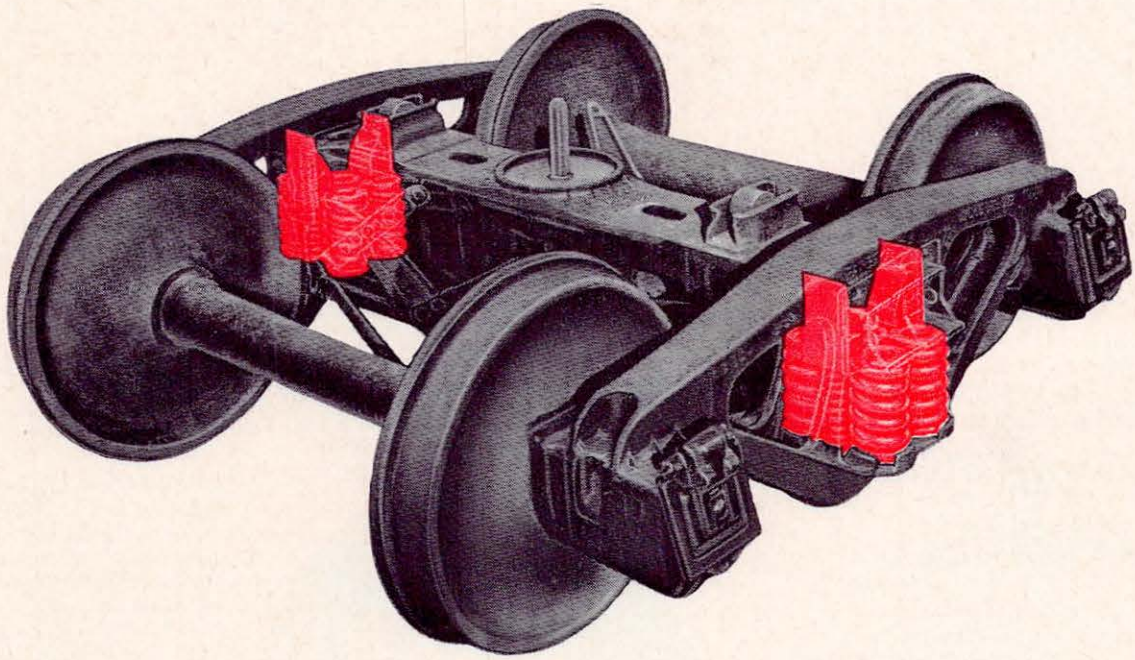

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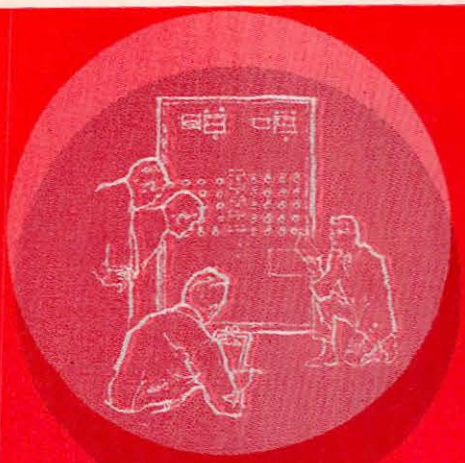
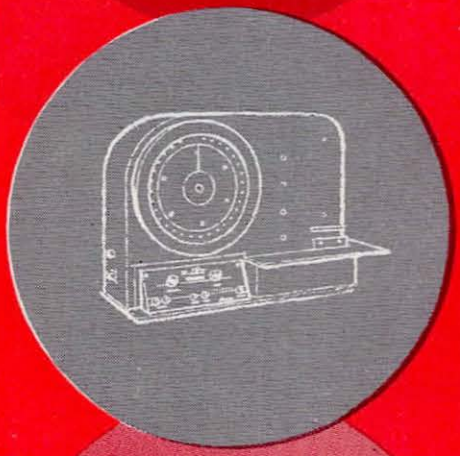
A MESSAGE TO MANAGEMENT FROM FAIRBANKS-MORSE ELECTRONICS DIVISION...

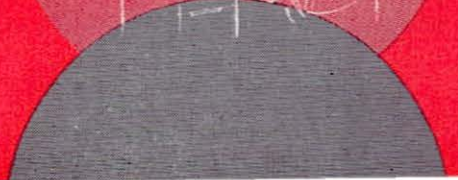




Series 600 Batchetron
Weighs out pre-set amounts of any material used in batching systems. High speed action insures positive cut off of ingredient flow. Improved electronic weight sensing circuit provides long, accurate trouble-free service.

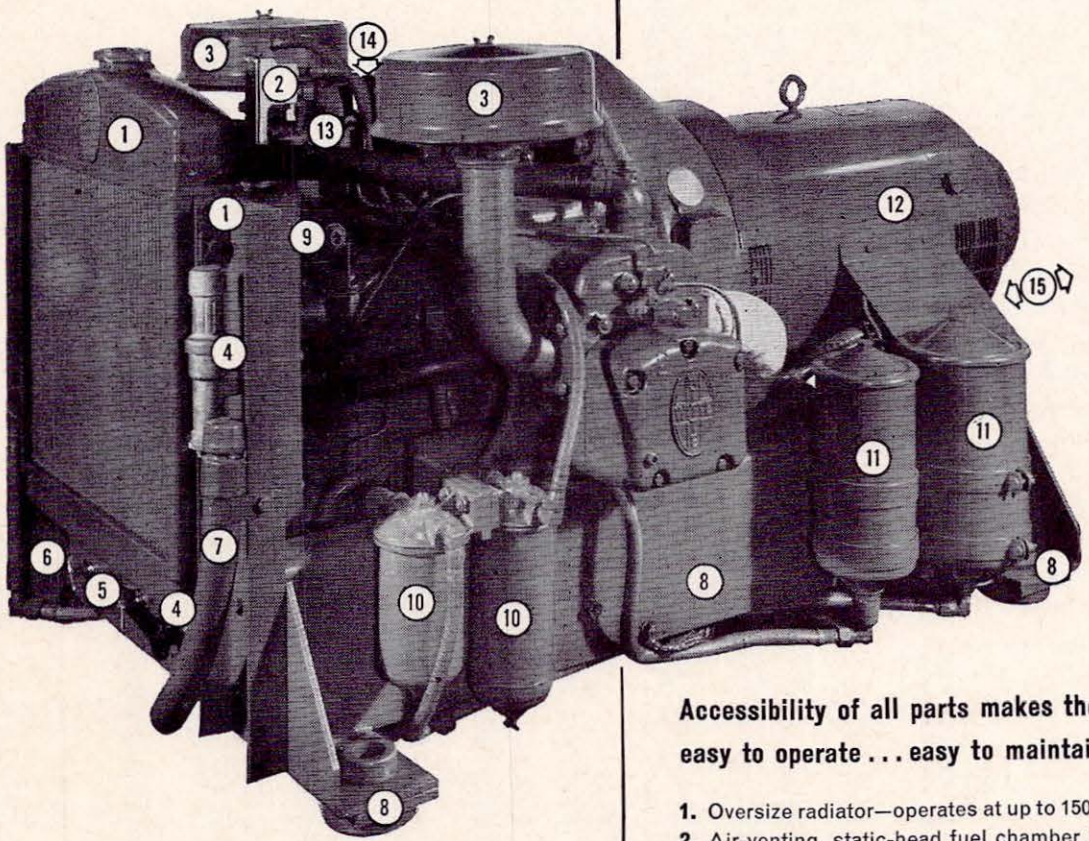
Model CR
Versatile weighing and printing instrument for a wide variety of applications. Location convenience—this instrument can be placed within a radius of 500 feet from scale platform, thus offering weight records at a central plant.

Model Q—High Speed Weigher
Maximum speed—maximum accuracy for weighing materials in motion. Equipped with read-out feature and built-in memory, to transmit weight records into the most modern computers, printing devices, tape and card punch machines.



NEW DIMENSIONS IN ELECTRONIC DEVICES

Witte Diesel Engine-Generator Units are Built Low, Time-Tested and Packed with Endurance



Especially built for demanding refrigeration service, the Witte Model 100RDA, Type "E," 12½ KW Diesel Engine-Generator Unit has a 60 cycle-40 cycle brushless generator and Witte two-cylinder, horizontally-opposed, 4 cycle Diesel Engine.*

The Railway Mechanical Refrigeration Industry is relatively new . . . yet Witte has been active as a power supplier in the field for over five years. Repeat orders from users attest to built-in quality and reliable performance. These fine railroad units are backed by a world-known organization.

Witte . . . noted for long-lived, continuous-running engines . . . is continually proving the capability of this railway unit in mechanical refrigeration applications—where only a "live" engine is an acceptable one.

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Witte Engine Works
Oil Well Supply
Division of
United States Steel

1615 Oakland Avenue, Kansas City 26, Missouri

Accessibility of all parts makes the Witte easy to operate . . . easy to maintain.

1. Oversize radiator—operates at up to 150°F. ambient.

2. Air-venting, static-head fuel chamber built into injection pump—eliminates shutdown from air leaks in car's fuel system.

3. Dry type air cleaners—quickly and easily serviced.

4. Ether injection system—for cold starting.

5. Starting control (one lever provides all starting functions).

6. Stop control.

7. Extra length, lube-oil, dump hose—completely drains sump.

8. Extra-heavy, rigid, skid-support with oversize shock mounts.

9. Two-speed engine control (1800 rpm—"pull-down" speed) for maximum fuel economy (1200 rpm—"holding" speed) Thermostat actuated.

10. Primary and secondary fuel filters.

11. Bypass, Full Flow lube oil filters—1200 hr. change period.

***12.** 12½ KW (continuous rating) brushless generator—operates at 60 cycles ("pull-down") 40 cycles ("holding"). Higher continuous ratings are available.

13. Mechanical, safety shutdown—built into injection pump.

14. Load Compensator Switch—extends the functioning of the mechanical safety control to meet abnormal, transient temperature conditions.

15. Center-of-Mass of the Witte unit is less than 16 inches off the car floor—optimum installation to handle car humps, shocks and over-the-road vibration.

All accessories are readily accessible.

Freight Operating Statistics of Large Railroads—Selected Item

	Region, Road and Year		Miles of road operated	Train miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car Miles: Loaded (*thousands*)	Car Miles: Per cent loaded	Ton-miles (*thousands*): Gross excl.locos & tenders	Ton-miles (*thousands*): Net rev. and non-rev	Road-locos. on lines: Serviceable: Unstored	Road-locos. on lines: Serviceable: Stored	Road-locos. on lines: B.O.	Road-locos. on lines: Per cent B.O.
New Eng. Region	Boston & Maine	1961	1,547	648,114	653,014	14,648	21,929	57.9	1,656,417	666,971	76	2	15	16.1
		1960	1,546	678,896	679,947	9,039	24,326	59.0	1,780,622	692,106	82	..	15	15.5
	Maine Central	1961	937	263,482	266,454	7,673	7,865	55.4	607,361	237,205	29	..	1	3.3
		1960	936	288,938	293,496	8,687	8,852	56.8	668,717	259,872	31	..	1	3.1
	N. Y., N. H. & Hartfd	1961	1,717	639,953	642,118	41,805	23,536	60.3	1,637,442	648,405	65	..	16	19.8
		1960	1,739	754,138	758,281	46,857	27,079	62.4	1,821,616	719,594	65	..	13	16.7
Great Lakes Region	Delaware & Hudson	1961	763	471,540	477,591	6,077	21,179	60.0	1,583,138	763,158	36	..	10	21.7
		1960	763	505,274	512,385	8,026	24,504	63.3	1,741,921	866,922	33	..	4	10.8
	Erie-Lackawanna*	1961	3,077	2,133,516	2,157,332	63,648	100,355	63.9	6,757,637	2,600,814	242	..	10	4.0
		1960	3,179	2,358,122	2,389,330	85,444	114,389	66.1	7,612,373	3,079,188	225	..	13	5.5
	Grand Trunk Western	1961	946	532,752	533,290	3,450	17,119	57.6	1,240,056	482,999	32	11	4	8.5
		1960	951	620,940	623,910	5,615	21,092	57.6	1,517,080	584,429	45	..	4	8.2
	Lehigh Valley	1961	1,114	504,071	510,124	12,208	21,285	63.4	1,494,205	672,850	31	..	3	8.8
		1960	1,114	570,059	577,345	16,345	24,783	64.5	1,729,907	788,909	28	..	6	17.6
	New York Central	1961	10,209	5,331,116	5,354,254	258,318	203,988	55.8	16,675,078	7,003,978	426	4	55	11.3
		1960	10,326	6,149,010	6,179,299	276,507	253,401	56.4	20,311,751	8,449,229	464	..	39	7.8
	New York, Chic & St. L	1961	2,155	1,473,473	1,473,473	15,807	62,979	61.1	4,704,729	1,989,881	98	2	2	2.0
		1960	2,155	1,843,311	1,843,311	17,350	81,314	62.5	5,975,248	2,603,766	103	25	12	8.6
	Pitts. & Lake Erie	1961	220	106,844	106,844	....	4,436	56.3	441,700	251,415	11	9	..	..
		1960	220	173,709	173,709	....	7,127	63.0	671,293	398,268	15	..	1	6.3
	Wabash	1961	2,410	1,043,311	1,043,311	10,989	48,765	60.9	3,538,251	1,427,933	112	..	2	1.8
		1960	2,400	1,238,517	1,239,569	13,273	57,297	63.7	3,990,986	1,625,877	111	..	4	3.5
Central Eastern Region	Baltimore & Ohio	1961	5,791	3,334,198	3,524,594	180,901	131,224	56.7	11,069,538	5,081,938	364	..	29	7.4
		1960	5,794	4,006,187	4,263,045	281,080	169,672	58.5	13,603,847	6,379,701	384	40	29	6.4
	Bessemer & Lake Erie	1961	203	75,617	70,929	69	2,054	53.6	235,120	137,123	10	8	..	..
		1960	203	124,952	126,540	163	4,740	64.0	484,023	295,898	14	2	..	..
	Central RR Co. of New Jersey	1961	592	309,647	313,703	15,309	11,109	58.4	923,335	476,230	56	3	4	6.3
		1960	594	322,939	326,931	15,994	12,265	62.5	976,390	518,876	62	2	5	7.2
	Chicago & Eastern Ill	1961	863	269,321	269,321	7,100	13,195	60.6	1,068,835	540,807	27	..	5	15.6
		1960	863	313,966	313,966	7,305	15,572	61.0	1,233,784	612,042	28	..	4	12.5
	Elgin, Joliet & Eastern	1961	205	132,897	135,556	....	4,813	58.7	408,293	217,045	38	9	1	2.1
		1960	205	217,232	220,776	....	6,965	58.5	613,452	330,149	42	..	1	2.3
	Pennsylvania System	1961	9,801	6,424,344	6,729,169	364,768	261,021	60.0	20,168,834	9,078,111	629	12	127	16.5
		1960	9,831	7,936,127	8,318,479	519,978	328,298	61.2	25,050,254	11,436,168	707	..	67	8.7
	Reading	1961	1,295	785,474	788,199	20,781	27,699	55.5	2,539,738	1,325,417	137	7	25	14.8
		1960	1,302	887,205	890,881	25,320	33,910	57.6	3,007,443	1,583,793	155	4	16	9.1
	Western Maryland	1961	841	372,904	383,743	19,694	14,449	55.6	1,349,218	715,710	39	3	1	2.3
		1960	843	413,099	428,019	23,907	17,742	62.3	1,595,534	897,707	42	..	1	2.3
Pocahontas Region	Chesapeake & Ohio	1961	5,029	2,945,367	2,949,750	56,529	125,628	54.2	11,101,972	5,787,955	553	15	66	10.4
		1960	5,060	3,371,018	3,374,720	57,999	152,509	55.4	13,545,733	7,349,493	587	..	48	7.6
	Norfolk & Western	1961	2,725	1,869,274	1,912,932	79,839	96,129	54.0	9,604,974	5,173,297	146	..	8	5.2
		1960	2,722	2,226,300	2,272,948	82,194	111,254	54.1	11,124,442	6,014,702	165	25	11	5.5
	Rich., Fred. & Potomac	1961	110	112,684	112,684	2,075	6,686	59.4	490,786	202,166	14	..	1	6.7
		1960	110	114,427	114,427	2,399	7,355	62.3	517,560	214,611	14	..	1	6.7
Southern Region	Atlantic Coast Line	1961	5,561	2,005,017	2,005,017	19,723	71,343	52.8	6,004,104	2,714,946	127	..	1	.8
		1960	5,563	2,140,379	2,140,379	22,417	79,944	57.8	6,238,405	2,853,972	129	..	3	2.3
	Central of Georgia	1961	1,712	518,252	518,252	7,037	19,859	61.8	1,585,495	779,391	34	..	3	8.1
		1960	1,712	538,549	538,549	6,173	21,791	64.3	1,654,292	810,392	33	..	1	2.9
	Florida East Coast	1961	572	269,802	269,802	....	10,778	53.6	838,311	296,287	51	5	4	6.7
		1960	572	320,598	320,598	....	11,062	52.8	858,889	302,217	47	7	..	..
	Gulf, Mobile & Ohio	1961	2,717	755,249	755,249	....	40,281	65.6	3,007,839	1,449,884	87	..	4	4.4
		1960	2,717	778,319	778,319	175	42,396	65.7	3,050,869	1,456,760	86	..	5	5.5
	Illinois Central	1961	6,500	2,578,549	2,578,549	66,101	115,162	60.0	8,706,437	4,020,736	159	..	26	14.1
		1960	6,500	2,919,593	2,919,593	76,129	130,807	60.8	9,737,034	4,483,353	177	8	55	22.9
	Louisville & Nashville	1961	5,666	2,616,615	2,618,910	46,146	94,042	59.5	7,556,528	3,698,378	168	..	3	1.8
		1960	5,666	2,766,849	2,769,759	46,288	108,346	59.9	8,705,506	4,294,433	167	..	3	1.8
	Seaboard Air Line	1961	4,123	1,660,448	1,660,448	6,792	68,094	57.0	5,610,383	2,537,636	127	..	5	3.8
		1960	4,134	1,784,565	1,784,565	6,872	74,161	58.9	5,881,615	2,707,421	122	..	4	3.2
	Southern	1961	6,242	2,420,765	2,421,145	30,324	107,477	60.8	7,934,893	3,620,688	193	5	7	3.4
		1960	6,242	2,539,421	2,539,831	26,237	118,477	62.8	8,398,485	3,919,626	199	4	7	3.3
Northwestern Region	Chicago & North Western	1961	10,725	2,621,782	2,621,811	30,133	93,409	60.1	6,900,118	2,774,234	190	31	15	6.4
		1960	10,635	2,693,393	2,693,503	32,425	98,328	61.3	7,268,887	3,023,267	241	9	18	6.7
	Chicago Great Western	1961	1,437	375,475	375,475	461	17,365	63.8	1,282,035	591,262	24	..	3	11.1
		1960	1,427	398,796	398,796	729	19,609	65.1	1,391,316	639,283	25	..	2	7.4
	Chi., Milw., St. P. & Pacific	1961	10,574	2,171,448	2,187,681	23,548	92,803	62.3	6,818,496	3,026,171	153	16	6	3.4
		1960	10,591	2,343,578	2,363,870	26,193	105,809	63.5	7,535,943	3,310,697	153	18	6	3.4
	Duluth, Missabe & Iron Range	1961	572	72,660	72,668	351	996	50.1	80,887	33,916	24	45	5	6.8
		1960	575	87,165	87,198	478	1,904	49.4	165,281	81,837	43	30	5	6.4
	Great Northern	1961	8,267	2,543,457	2,556,999	60,456	100,673	64.5	7,378,280	3,350,855	284	12	5	1.7
		1960	8,275	2,647,799	2,660,530	57,853	107,743	65.4	7,720,380	3,496,974	276	7	15	5.0
	Soo Line†	1961	4,698	1,112,272	1,113,544	1,560	36,534	61.9	2,645,318	1,201,232	108	5	..	..
		1960	4,713	1,131,009	1,134,057	1,756	38,591	65.9	2,648,222	1,221,797	107	..	9	7.8
	Northern Pacific	1961	6,505	2,053,753	2,069,846	23,722	82,522	63.6	5,805,704	2,568,169	242	14	10	3.8
		1960	6,533	2,246,686	2,266,507	29,992	94,640	65.2	6,536,266	2,916,162	233	7	9	3.6
	Spokane, Portland & Seattle	1961	936	378,222	378,222	2,850	16,200	69.8	1,123,198	531,571	30	..	..	..
		1960	936	410,670	410,670	3,075	17,341	72.6	1,180,476	570,972	30	..	..	..
Central Western Region	Atch., Top. & S. Fe (incl.) G. C. & S. F. and P. & S. F.)	1961	13,010	6,614,857	6,822,790	71,387	296,945	61.7	22,454,482	9,020,141	671	19	50	6.8
		1960	12,970	7,719,878	8,215,661	157,629	329,949	62.8	24,102,055	9,500,015	622	..	39	5.9
	Chic., Burl. & Quicny	1961	8,613	2,793,310	2,786,961	75,950	119,918	64.2	8,450,137	3,745,996	128	3	55	29.6
		1960	8,625	2,989,392	2,983,694	68,880	126,513	64.1	8,761,391	3,796,323	137	5	77	35.2
	Chic., Rock I. & Pac	1961	7,833	2,523,513	2,542,550	3,373	106,387	59.3	8,115,599	3,318,309	201	..	5	2.4
		1960	7,511	2,866,631	2,878,047	6,094	117,232	61.0	8,661,576	3,509,920	199	..	7	3.4
	Denver & R. G. Western	1961	2,128	730,199	771,161	75,797	35,175	72.2	2,549,988	1,258,906	75	5	10	11.1
		1960	2,128	885,133	937,372	87,567	40,356	72.8	2,862,394	1,408,807	80	4	9	9.7
	Southern Pacific	1961	7,897	5,576,114	5,782,824	335,557	255,618	64.5	18,470,060	7,920,423	694	24	27	3.6
		1960	8,010	6,068,563	6,315,913	412,793	285,457	65.8	19,691,406	8,559,656	717	18	26	3.4
	Union Pacific	1961	9,727	5,322,696	5,379,162	127,864	253,178	65.6	17,412,474	7,608,345	329	72	51	11.3
		1960	9,747	5,679,954	5,752,450	151,789	281,345	65.8	19,208,912	8,353,441	346	30	73	16.3
	Western Pacific	1961	1,188	656,957	671,018	39,384	27,890	68.7	1,900,728	869,866	50	3	3	5.4
		1960	1,188	776,567	792,833	59,957	29,973	70.6	2,006,266	923,502	50	..	3	5.7
Southwestern Region	Kansas City Southern	1961	889	352,759	352,905	394	22,020	64.5	1,710,089	812,710	25	..	1	3.8
		1960	886	372,953	373,031	88	23,466	65.1	1,773,677	826,169	23	..	1	4.2
	Louisiana & Arkansas	1961	746	210,905	210,905	174	10,962	64.4	881,622	432,112	14	..	1	6.7
		1960	746	231,997	231,997	29	11,617	63.8	927,892	447,236	16	..	..	..
	Mo.-Kans.-Texas Lines	1961	2,883	636,908	636,908	5,356	28,201	62.5	2,164,858	974,138	73	..	..	..
		1960	2,915	686,412	686,412	6,519	28,866	60.4	2,181,944	934,109	59	..	..	..
	Missouri Pacific	1961	9,362	3,111,368	3,111,368	22,416	151,171	63.7	11,066,533	5,040,850	199	22	17	7.1
		1960	9,413	3,531,967	3,531,967	25,348	163,570	63.4	11,756,152	5,592,154	219	..	20	8.4
	St. Louis-San Francisco	1961	4,505	1,678,097	1,678,097	17,692	64,402	67.2	4,430,136	2,085,761	91	7	12	10.9
		1960	4,527	1,778,865	1,778,865	19,118	71,087	67.1	4,831,368	2,237,387	102	..	11	9.7
	St. Louis Southwestern Lines	1961	1,554	992,973	992,985	9,200	45,840	68.5	3,043,455	1,360,467	47	..	4	7.8
		1960	1,554	1,061,065	1,061,065	13,207	50,270	68.5	3,272,392	1,462,805	52	..	1	1.9
	Texas & New Orleans	1961	4,086	1,659,966	1,659,966	119	75,652	62.7	5,619,706	2,466,383	141	..	1	.7
		1960	4,079	1,761,219	1,761,219	91	82,943	65.5	5,929,200	2,619,396	138	..	2	1.4
	Texas & Pacific	1961	1,819	707,531	707,531	6,603	35,459	60.9	2,737,166	1,080,443	38	..	1	2.6
		1960	1,819	887,573	887,573	8,631	41,398	61.8	3,114,810	1,175,595	38	..	2	5.0

...r the First Quarter 1961 Compared with First Quarter 1960

	Region, Road and Year	Freight cars on line: Home	Freight cars on line: Foreign	Freight cars on line: Total	Freight cars on line: Per Cent B.O.	G.t.m.per train-hr. excl.locos and tenders	G.t.m.per train-mi. excl.locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Cars-miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine 1961	2,220	6,285	8,505	2.1	38,290	2,566	1,033	30.4	833	47.3	4,790	15.0	91.9
	1960	2,275	7,749	10,024	3.4	41,465	2,628	1,022	28.5	746	44.4	4,920	15.8	82.0
	Maine Central 1961	2,733	2,488	5,221	6.0	31,124	2,311	903	30.2	515	30.8	2,813	13.5	123.5
	1960	2,744	2,424	5,168	6.0	31,792	2,318	901	29.4	562	33.7	3,051	13.7	123.3
	N. Y., N. H. & Hartfd 1961	4,737	11,932	16,669	6.0	38,144	2,559	1,013	27.6	418	25.2	4,196	14.9	118.9
	1960	4,087	14,599	18,686	8.2	38,790	2,415	954	26.6	435	26.2	4,547	16.1	137.5
Great Lakes Region	Delaware & Hudson 1961	6,556	3,046	9,602	13.4	59,680	3,401	1,640	36.0	896	41.5	11,113	17.8	124 3
	1960	4,023	4,432	8,455	8.5	63,168	3,468	1,725	35.4	1,282	57.3	12,486	18.3	168.2
	Erie-Lackawanna* 1961	19,397	17,896	37,293	13.2	64,695	3,202	1,232	25.9	776	46.8	9,392	20.4	108.4
	1960	16,136	24,589	40,725	10.6	65,808	3,260	1,319	26.9	845	47.5	10,644	20.4	125.7
	Grand Trunk Western 1961	5,571	5,604	11,175	7.2	57,333	2,334	909	28.2	473	29.1	5,673	24.6	140.0
	1960	5,108	7,403	12,511	6.6	54,975	2,452	945	27.7	520	32.5	6,753	22.5	126.5
	Lehigh Valley 1961	7,911	8,046	15,957	18.7	61,492	2,997	1,350	31.6	467	23.2	6,711	20.7	187.8
	1960	6,693	8,969	15,662	12.2	63,225	3,064	1,397	31.8	558	27.2	7,782	20.8	210.8
	New York Central 1961	68,739	56,074	124,813	10.8	56,605	3,154	1,325	34.3	615	32.1	7,623	18.1	147.9
	1960	60,363	71,229	131,592	9.3	58,216	3,332	1,386	33.3	712	37.9	8,992	17.6	165.5
	New York, Chic. & St. L 1961	10,413	10,483	20,896	14.7	60,673	3,227	1,365	31.6	987	51.2	10,260	19.0	176.6
	1960	9,242	14,194	23,436	14.2	59,843	3,277	1,428	32.0	1,182	59.0	13,277	18.5	162.5
	Pitts. & Lake Erie 1961	10,420	2,467	12,887	8.6	66,143	4,146	2,360	56.7	220	6.9	12,698	16 0	63.5
	1960	5,510	7,128	12,638	5.6	59,051	3,880	2,302	55.9	366	10.4	19,894	15.3	120.3
	Wabash 1961	7,308	9,486	16,794	7.0	83,546	3,392	1,369	29.3	1,035	58.0	6,583	24.6	108.0
	1960	10,113	7,460	17,573	12.0	79,050	3,234	1,318	28.4	1,041	57.6	7,444	24.5	124.7
Central Eastern Region	Baltimore & Ohio 1961	64,135	28,196	92,331	22.0	54,324	3,379	1,551	38.7	604	27.5	9,751	16.4	106.2
	1960	57,734	39,622	97,356	12.5	53,545	3,442	1,614	37.6	707	32.1	12,100	15.8	114.0
	Bessemer & Lake Erie 1961	6,615	1,080	7,695	6.4	49,520	3,321	1,937	66.8	220	6.1	7,505	15.9	64.6
	1960	4,599	1,236	5,835	8.4	56,991	4,115	2,515	62.4	580	14.5	16,018	14.7	123.8
	Central RR Co. of New Jersey 1961	4,267	9,880	14,147	15.2	41,392	3,117	1,608	42.9	354	14.1	8,938	13.9	83.3
	1960	4,472	9,653	14,125	18.4	45,967	3,148	1,673	42.3	397	15.0	9,599	15.2	77.1
	Chicago & Eastern Ill 1961	3,434	2,567	6,001	13.5	71,066	4,003	2,026	41.0	1,006	40.5	6,963	17.9	99.9
	1960	3,386	3,096	6,482	15.5	72,760	3,960	1,964	39.3	1,068	44.6	7,793	18.5	114.2
	Elgin, Joliet & Eastern 1961	8,160	4,648	12,808	8.9	24,820	3,155	1,677	45.1	186	7.0	11,764	8.1	43.9
	1960	7,503	8,122	15,625	5.1	20,919	2,921	1,572	47.4	230	8.3	17,698	7.4	79.9
	Pennsylvania System 1961	122,591	63,623	186,214	15.4	54,768	3,213	1,446	34.8	543	26.0	10,292	17.4	115.5
	1960	107,660	89,606	197,266	12.0	54,339	3,243	1,481	34.8	645	30.2	12,783	17.2	137.6
	Reading 1961	17,691	12,771	30,462	10.9	51,173	3,233	1,687	47.9	477	18.0	11,372	15.8	70.4
	1960	17,023	17,346	34,369	16.7	53,272	3,391	1,786	46.7	521	19.4	13,367	15.7	69.4
	Western Maryland 1961	9,654	2,667	12,321	8.7	53,008	3,682	1,953	49.5	672	24.4	9,456	14.7	116.6
	1960	6,783	3,213	9,996	6.1	55,990	3,914	2,202	50.6	988	31.3	11,702	14.5	128.5
Pocahontas Region	Chesapeake & Ohio 1961	71,953	16,658	88,611	11.5	67,972	3,783	1,972	46.1	747	30.0	12,788	18.0	57.7
	1960	64,038	26,062	90,100	4.0	73,500	4,037	2,191	48.2	894	33.5	15,961	18.3	64.8
	Norfolk & Western 1961	58,947	7,274	66,221	8.9	89,192	5,247	2,826	53.8	862	29.7	21,094	17.4	156.0
	1960	50,912	8,214	59,126	2.7	89,151	5,114	2,765	54.1	1,076	36.8	24,282	17.8	137.4
	Rich., Fred., & Potomac 1961	193	1,021	1,214	2.1	98,374	4,364	1,798	30.2	1,825	101.6	20,421	22.6	90.3
	1960	88	1,139	1,227	2.2	107,067	4,530	1,878	29.2	2,250	123.8	21,440	23.7	89.6
Southern Region	Atlantic Coast Line 1961	16,163	16,295	32,458	6.4	52,855	3,000	1,357	38.1	882	43.9	5,425	17.7	198.0
	1960	19,298	16,685	35,983	5.1	50,549	2,925	1,338	35.7	845	41.0	5,638	17.3	207.4
	Central of Georgia 1961	4,939	5,031	9,970	7.7	52,215	3,071	1,510	39.2	890	36.7	5,058	17.1	186.2
	1960	3,510	5,610	9,120	3.4	53,967	3,077	1,508	37.3	986	41.1	5,202	17.6	195.1
	Florida East Coast 1961	704	3,527	4,231	.8	45,326	3,107	1,098	27.5	742	50.3	5,755	14.6	58.3
	1960	723	3,920	4,643	.4	44,697	2,679	943	27.3	686	47.5	5,806	16.7	73.8
	Gulf, Mobile & Ohio 1961	7,907	8,901	16,808	6.4	78,985	3,984	1,921	36.0	975	41.3	5,929	19.8	99.6
	1960	6,592	9,638	16,230	6.7	77,930	3,922	1,873	34.4	986	43.7	5,892	19.9	101.4
	Illinois Central 1961	28,537	21,247	49,784	4.4	62,336	3,400	1,570	34.9	912	43.5	6,873	18.5	172.7
	1960	26,768	20,377	47,145	3.1	61,128	3,359	1,547	34.3	1,043	50.0	7,580	18.3	124.8
	Louisville & Nashville 1961	42,974	12,517	55,491	11.5	55,686	2,899	1,419	39.3	784	33.5	7,253	19.3	189.5
	1960	32,802	18,724	51,526	11.3	56,340	3,156	1,557	39.6	882	37.1	8,329	17.9	199.3
	Seaboard Air Line 1961	18,331	11,918	30,249	4.4	61,928	3,436	1,554	37.3	906	42.6	6,839	18.3	169.1
	1960	15,239	14,571	29,810	3.3	60,860	3,351	1,543	36.5	981	45.6	7,197	18.5	183.3
	Southern 1961	21,343	30,957	52,300	3.1	58,069	3,283	1,498	33.7	768	37.5	6,445	17.7	148.6
	1960	21,237	31,592	52,829	3.7	56,560	3,313	1,546	33.1	835	40.1	6,900	17.1	151.2
Northwestern Region	Chicago & North Western 1961	25,761	24,881	50,642	8.4	47,715	2,640	1,061	29.7	606	33.9	2,874	18.1	132.4
	1960	24,962	31,197	56,159	7.2	46,566	2,709	1,127	30.7	618	32.8	3,124	17.3	127.7
	Chicago Great Western 1961	2,598	3,540	6,138	4.0	66,060	3,426	1,580	33.5	1,089	50.9	4,572	19.3	166.3
	1960	2,634	4,578	7,212	3.4	65,428	3,496	1,606	32.6	1,033	48.6	4,889	18.8	175.3
	Chic., Milw., St. P. & Pacific 1961	30,954	19,999	50,953	6.8	66,505	3,149	1,397	32.6	662	32.6	3,180	21.2	149.9
	1960	28,286	21,469	49,755	5.3	65,355	3,225	1,417	31.3	736	37.0	3,435	20.3	155.6
	Duluth, Missabe & Iron Range 1961	13,661	343	14,004	1.6	17,738	1,158	485	34.1	27	1.6	659	15.9	11.7
	1960	12,867	504	13,371	1.1	29,877	2,011	996	43.0	67	3.2	1,564	15.8	14.6
	Great Northern 1961	25,490	15,327	40,817	3.4	66,188	2,912	1,323	33.3	866	40.4	4,504	22.8	104.2
	1960	24,042	18,001	42,043	3.5	63,501	2,935	1,329	32.5	939	44.2	4,643	21.8	110.7
	Soo Line† 1961	8,866	7,133	15,999	8.2	47,102	2,381	1,081	32.9	898	44.1	2,841	19.8	119.3
	1960	8,308	6,048	14,356	6.7	44,906	2,350	1,084	31.7	891	42.7	2,849	19.2	116.4
	Northern Pacific 1961	20,533	14,735	35,368	3.5	62,376	2,836	1,254	31.1	799	40.3	4,387	22.1	92.6
	1960	18,401	15,284	33,685	3.1	63,463	2,913	1,300	30.8	935	46.5	4,905	21.8	108.2
	Spokane, Portland & Seattle 1961	1,609	5,103	6,712	2.5	42,308	2,985	1,413	32.8	969	42.3	6,310	14.2	189.3
	1960	1,449	4,206	5,655	3.6	42,179	2,882	1,394	32.9	1,143	47.8	6,703	14.7	163.0
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1961	54,878	34,412	89,920	4.9	86,448	3,399	1,366	30.4	1,144	61.0	7,704	25.5	110.8
	1960	51,647	32,169	83,816	4.6	79,801	3,133	1,235	28.8	1,239	68.5	8,049	25.6	146.2
	Chic., Burl. & Quincy 1961	25,253	18,795	44,048	4.4	70,168	3,040	1,348	31.2	943	47.0	4,832	23.2	179.7
	1960	26,889	20,678	47,567	4.1	65,276	2,948	1,278	30.0	910	47.3	4,837	22.3	161.8
	Chic., Rock I. & Pacific 1961	15,405	18,997	34,402	5.5	69,019	3,223	1,318	31.2	1,072	57.9	4,707	21.5	148.0
	1960	14,863	20,254	35,117	5.4	63,996	3,027	1,227	29.9	1,083	59.3	5,135	21.2	170.3
	Denver & R. G. Western 1961	8,301	6,128	14,429	5.6	76,219	3,500	1,728	35.8	974	37.7	6,573	21.8	111.8
	1960	8,574	6,175	14,749	5.2	66,702	3,241	1,595	34.9	1,063	41.8	7,275	20.6	124.7
	Southern Pacific 1961	31,507	41,238	72,745	1.9	80,664	3,347	1,435	31.0	1,239	62.1	11,144	24.4	99.0
	1960	30,298	40,000	70,298	1.9	74,239	3,277	1,424	30.0	1,291	65.4	11,743	22.9	104.6
	Union Pacific 1961	34,112	29,357	63,469	2.6	92,801	3,309	1,446	30.1	1,348	68.4	8,691	28.4	138.8
	1960	32,399	32,193	64,592	2.4	92,594	3,408	1,482	29.7	1,422	72.8	9,418	27.4	147.1
	Western Pacific 1961	2,677	2,752	5,429	5.4	86,248	2,898	1,326	31.2	1,770	82.7	8,136	29.8	145.1
	1960	2,565	2,443	5,008	4.4	74,279	2,605	1,199	30.8	2,090	96.0	8,542	28.8	181.5
Southwestern Region	Kansas City Southern 1961	2,514	5,377	7,891	4.5	100,753	4,868	2,314	36.9	1,202	50.5	10,158	20.8	192.5
	1960	2,135	5,690	7,825	4.7	99,466	4,771	2,223	35.2	1,169	51.0	10,247	20.9	203.8
	Louisiana & Arkansas 1961	1,951	2,721	4,672	9.0	87,143	4,236	2,076	39.4	1,047	41.2	6,436	20.8	176.8
	1960	1,806	3,556	5,362	6.4	80,400	4,033	1,944	38.5	938	38.1	6,588	20.1	185.2
	Mo.-Kans.-Texas Lines 1961	5,520	6,159	11,679	12.4	59,719	3,405	1,532	34.5	939	43.5	3,754	17.6	106.3
	1960	5,132	5,609	10,741	9.9	58,481	3,184	1,363	32.4	947	48.5	3,521	18.4	143.1
	Missouri Pacific 1961	26,689	18,286	44,975	8.2	73,641	3,568	1,625	33.3	12,29	57.9	5,983	20.7	167.0
	1960	24,011	21,658	45,669	6.9	72,015	3,341	1,476	31.7	1,248	62.1	6,061	21.6	180.2
	St. Louis-San Francisco 1961	9,239	9,636	18,874	1.2	58,117	2,651	1,248	32.4	1,194	54.9	5,114	22.0	186.5
	1960	11,396	10,303	21,699	8.6	58,445	2,728	1,264	31.5	1,143	54.1	5,432	21.5	196.7
	St. Louis Southwestern Lines 1961	1,948	4,528	6,476	3.2	76,369	3,070	1,373	29.7	2,413	118.7	9,727	24.9	225.1
	1960	1,737	4,792	6,529	3.7	78,358	3,089	1,381	29.1	2,630	132.0	10,344	25.4	238.8
	Texas & New Orleans 1961	6,962	13,910	20,872	2.1	82,822	3,403	1,493	32.6	1,371	67.1	6,707	24.5	135.9
	1960	6,306	14,460	20,766	2.3	83,218	3,383	1,494	31.6	1,423	68.8	7,057	24.7	145.2
	Texas & Pacific 1961	3,396	5,202	8,598	3.5	88,811	3,908	1,542	30.5	1,357	73.1	6,600	23.0	213.7
	1960	3,184	5,602	8,786	4.7	83,788	3,525	1,330	28.4	1,442	82.1	7,102	23.9	261.1

* Includes operations of the Delaware Lackawanna & Western R. R. and Erie, merged October 17, 1960.
†Soo Line includes operations of Minneapolis, St. Paul & Sault Ste. Marie R. R. merged January 1, 1961.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

CENTRAL OF GEORGIA

W. E. DILLARD
PRESIDENT AND GENERAL MANAGER

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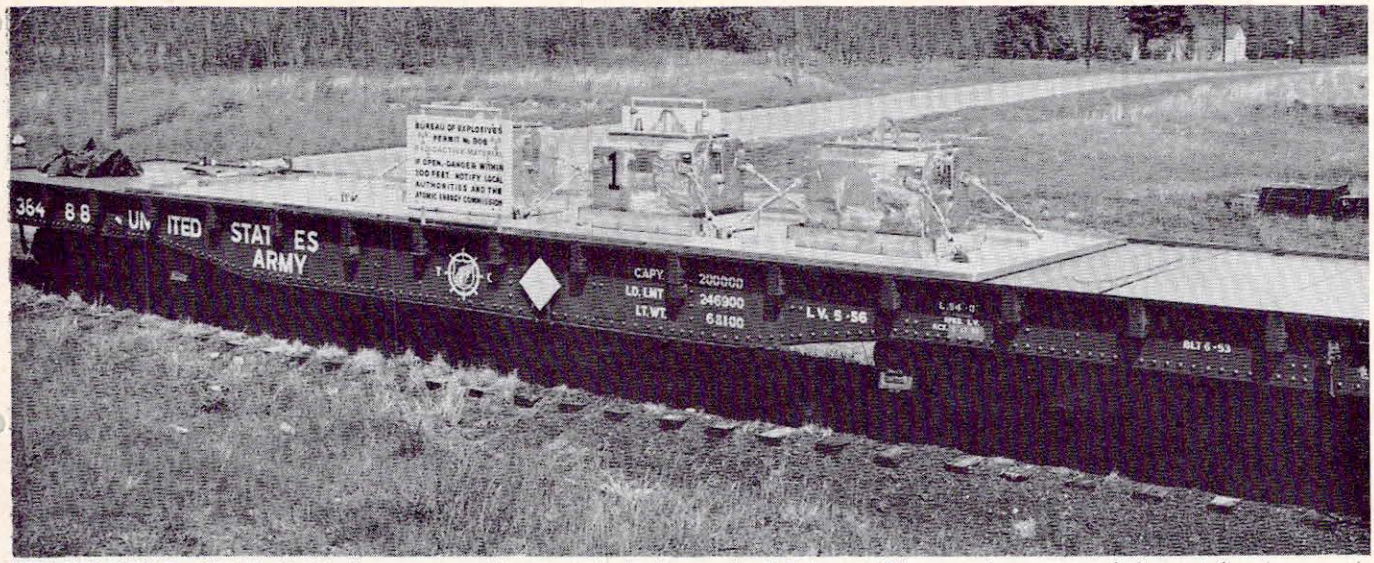


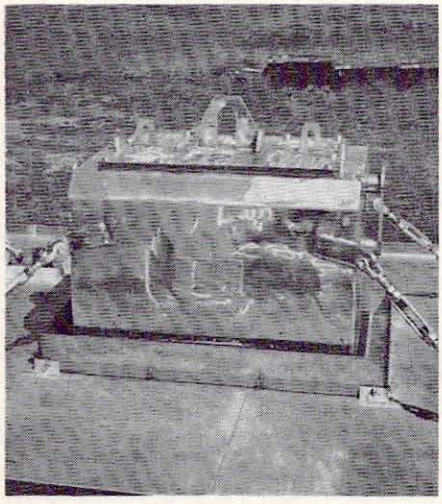
HEAVY-DUTY FLAT CAR for transporting spent fuel elements is modified from a Department of Defense six-wheel flat car. Three casks are carried per trip at present, but the car can take seven.

Spent Atomic Fuel Moves by Rail

► **The Story at a Glance: Spent fuel elements from Brookhaven National Laboratory's atomic research reactor at Upton, N. Y., must be moved to a reclamation facility near Idaho Falls, Idaho. About 23 tons of container are needed to handle a 210-lb payload. After investigating the merits of rail, piggyback and truck movement, the laboratory decided on straight rail. Now BNL has acquired and rebuilt a Department of Defense flat car, has designed and built casks for moving the radioactive fuel elements safely, has arranged for a new classification—Special Solids (Radioactive Material)—and has begun shipment as fast as the car can be turned around.**

Brookhaven National Laboratory was established in 1947 to provide facilities for basic nuclear research. Among the facilities is a sizeable research reactor.

Fuel for the nuclear reactor now consists of elements made up of bent plates containing uranium in an aluminum matrix clad in aluminum. Each



TURNBUCKLES are used to secure the shipping casks rigidly to the reinforced car frame. Stainless steel drip pans used around each cask are in turn mounted in an aluminum drip pan.

READY FOR SHIPMENT, casks are protected by tarpaulins. First shipment, in May 1961, took nine days en route between Long Island and Idaho.

element, which is about 2½ in. in diameter and two ft long, is loaded into a 25-ft cube of graphite where the fission takes place. From 1950 to 1957, the fuel used was natural uranium in the form of slugs about 4 in. long; these spent elements were shipped by AEC truck to Oak Ridge, Tenn., to be reprocessed.

After 1957, fuel for the reactor was converted to "enriched" uranium elements, of the plate type described above. Like all nuclear reactor fuel in the United States, this is leased to the laboratory by the Atomic Energy Commission. Because of the accumulation of fission products which "poison" the chain reaction, less than 50% of the available uranium can be fissioned in the reactor. The spent fuel must be returned to the AEC for separation of these fission products from the balance of the still fissionable uranium. All enriched uranium fuel, such as that now in use at Brookhaven and many other U. S. reactors, is presently reprocessed at an AEC-owned facility near Idaho Falls, Idaho. This plant is operated for the AEC by the Phillips Petroleum Company.

Not Suited to Private Carriage

As R. N. Hill, assistant material handling supervisor, supply and material division, BNL, explains, it soon became obvious that the haul from Long Island to Idaho was not one for which the kind of private carriage previously used was particularly suited.

Exploratory talks were begun with representatives of several competing modes of transportation: all-rail, joint truck-rail piggyback, and all-truck. Crane facilities available at the reactor storage canal effectively limited the size of containers to be used to a maximum weight of about 7½ tons. The fuel elements for the graphite research reactor were small enough so that shielding containers for them could be built that would travel equally well on a flat car or a highway trailer.

Negotiations with trucking companies were carried out on the basis of the trucker supplying a trailer, which Brookhaven would modify and retain in its own service, the over-the-road haul being performed by the common carrier. Rail negotiations anticipated obtaining a surplus car from the Army Transportation Corps on the same basis.

On the basis of 7½-ton containers, it turned out that piggyback or highway trailers would be able to handle three containers on a single vehicle. A heavy-duty rail flat car, however, could handle up to seven containers. Either the truck or the rail method could be made safe by proper design of the containers and holding devices.

With the advantage of control favoring the railroads and transit time not a vital factor, the question of rates had to be settled. Historically, a movement of spent atomic fuel would be governed by class rates under Chemical, NOIBN. When it was determined that rail shipment would be most advantageous, a new classification was worked out—Special Solids (Radioactive Material), although there is some precedence for this classification with other AEC shipments. The rate structure is basically similar to Chemical NOIBN rates, although at reduced minimums favoring this particular movement.

Since AEC owns the enriched fuel, shipments move under Confidential-Restricted Section 22 quotation. Commercial bills of lading are used carrying the endorsement "this material is the property of the USAEC. . . .," etc. The 46,000-lb shipment moves at a released value of $4,600.

The Long Island Rail Road is the originating carrier; the Union Pacific the delivering carrier. Routings between can vary. Freight is distributed, Mr. Hill says, "consistent with service, transit time, and length of haul individual carriers can perform, etc."

No special service is required of the carriers while the shipment is en route except passing reports—although, as Mr. Hill points out, the Bureau of Explosives placard attached to the car identifying it as containing radioactive material probably serves to keep the car from being delayed in yards, etc.

There are no restrictions on floating the car across New York harbor, although BNL is required to give the New York City Board of Health, Office of Radiation Control, notice of impending shipments. The Bureau of Explosives is also routinely notified, since the shipment is made under special permit of the bureau.

The first shipment in the new car—three containers, in May 1961—was nine days en route, although BNL figures that 12 days is normal for the trip. As fast as the car can be unloaded at the Idaho Chemical Processing Plant near Idaho Falls, the containers are emptied, and the car with containers is returned to Brookhaven for another load.

Brookhaven expects to ship about 1,200 elements a year, about 155 at a time. Each shipment will gross about 46,000 lb, although the payload is only 210 lb. (Mr. Hill comments jokingly that he was unable to get half rates for containers coming back empty.)

Leigh Phillips, associate health physicist, Brookhaven Graphite Research Reactor, BNL, points out that the car and containers were designed to comply with all requirements of proposed part 72 of the Federal Register and T. C. George's Tariff No. 12 (governing shipment of dangerous articles). A radiation safety survey is made of each shipment to determine that the requirements have been met.

How Car Was Modified

Frank A. Dugan, design engineer, Brookhaven Graphite Research Reactor, BNL, describes the modifications that were necessary to convert the ATC heavy-duty flat for spent-fuel-element service. The first step, he says, was to take off the existing deck, which was split and cracked. (Water draining off the casks might be absorbed in the wooden deck and could eventually build up contamination.) With the deck off, heavy channels were put in and welded to the cross beams of the car. Fish plates were added on the sides for additional strength. The channels served as the base for tie-down arrangements.

In areas where the casks were to be mounted, aluminum drip pans were built. Although the car is only handling three casks per trip at the present time, additional space at each end is available so the capacity can eventually be increased to seven casks.

The car, obtained from the Department of Defense through the AEC, is on permanent loan (renewable for an indefinite term). It has six-wheel trucks and a capacity of 100 tons.

The casks that carry the spent fuel elements are stainless steel containers lined with eight inches of lead. Their outer surfaces are polished and sanded to a near mirror-like finish to facilitate decontamination, but the casks are covered with tarpaulins while the car is in transit.

Outside dimensions of the containers are 31 in. by 31 in. by 44¼ in. Interior dimensions are 15½ in. by 15½ in. by 27 in. The cover, which is removable, weighs 1,700 lb.

No external cooling devices are needed for the BNL fuel elements since they are operated at a medium power level and allowed to "cool" for several months prior to shipment.

Loaded on the car, the casks rest on Neoprene mats in stainless steel drip pans, which in turn are mounted on the aluminum deck, which with its turned-up edges is essentially one big drip pan. Turnbuckles are used to fasten the casks securely to the car.

A large label on the side of the car, plus smaller labels on each cask, provide the required warnings that the contents are radioactive material.

Market Outlook

Carloadings Drop 0.4% Below Previous Week's

Loadings of revenue freight in the week ended August 5 totaled 588,969 cars, the Association of American Railroads announced on August 10. This was a decrease of 2,387 cars, or 0.4%, compared with the previous week; a decrease of 5,475 cars, or 0.9%, compared with the corresponding week last year; and an increase of 56,710 cars, or 10.7%, compared with the equivalent 1959 week, when there was a nationwide steel strike in progress.

Loadings of revenue freight for the week ended July 29 totaled 591,356 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, July 29

District	1961	1960	1959
Eastern	82,757	88,746	82,640
Allegheny	99,659	99,030	79,981
Pocahontas	51,769	53,616	46,740
Southern	106,506	105,646	109,627
Northwestern	95,526	102,884	67,755
Central Western	108,922	114,818	110,043
Southwestern	46,217	49,248	48,076
Total Western Districts	250,665	266,950	225,874
Total All Roads	591,356	613,988	544,862
Commodities:			
Grain and grain products	67,167	71,076	56,774
Livestock	2,726	3,301	3,750
Coal	105,404	104,905	98,662
Coke	6,236	5,689	3,445
Forest Products	40,169	39,549	42,251
Ore	56,794	63,254	11,695
Merchandise l.c.l.	27,602	34,162	39,514
Miscellaneous	285,258	292,052	288,771
July 29	591,356	613,988	544,862
July 22	584,137	619,818	536,395
July 15	573,306	606,814	585,073
July 8	424,984	457,779	552,313
July 1	533,573	547,893	574,102
Cumulative total, 30 weeks	15,765,545	17,988,189	18,487,031

PIGGYBACK CARLOADINGS.— U. S. piggyback loadings for the week ended July 29 totaled 11,015 cars, compared with 11,317 for the corresponding 1960 week. Loadings for 30 weeks up to July 29 totaled 327,769 cars, compared with 315,966 for the corresponding period of 1960.

IN CANADA. — Carloadings for the seven-day period ended July 21 totaled 73,984 cars, compared with 74,287 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
July 21, 1961	73,984	21,241
July 21, 1960	76,858	23,947
Cumulative Totals		
July 21, 1961	1,866,975	688,709
July 21, 1960	2,017,658	809,302

New Equipment

FREIGHT-TRAIN CARS

► *Detroit, Toledo & Ironton.*—Ordered 75 covered hoppers from ACF for immediate delivery at an estimated cost of $900,000.

► *General American.*—Built 100 tank cars in company shops during July, including 21 30,300-gal., nine 20,500-gal. and 18 20,000-gal. units. The remainder ranged between 16,000-gal. and 4,000-gal. capacity. GATC also received orders for 10 covered hoppers from Dow Chemicals, 7 covered hoppers from Corn Products and 2 covered hoppers from Koppers Co.

► *Norfolk & Western.*—Ordered 100 box cars from ACF—90 to be equipped with DF loaders, and 10 to be equipped with hydraulic cushion underframes. Cars are being built at ACF's St. Louis plant with deliveries scheduled to begin in October, at "over $1,250,000."

► *Southern Pacific.*—Ordered 40 special-design 86-ton gondola cars from Baldwin-Lima-Hamilton Corp. Cars will be used for handling wet copper concentrate.

PASSENGER-TRAIN CARS

► *Philadelphia Passenger Service Improvement Corp.*—Received a bid from the Budd Co. for the construction of stainless-steel commuter cars which PSIC plans to acquire and lease to the Pennsylvania and Reading. Budd offered to build 24 stainless-steel cars for $6,186,500, or 54 cars for $13,518,900. No action had been taken on the bid late last week. Bids were not received from other builders. Opening of bids was originally scheduled for July 5 (RA, June 12, p. 39) but was delayed at the request of PRR and Reading, which wanted to draw up alternate specifications.

FOREIGN

► *National Railways of Mexico.*—Ordered 40 covered hopper cars from Pullman-Standard for immediate delivery. P-S is also exporting to Mexico 75 covered hoppers for U. S. Gypsum and 22 covered hoppers for Cemento De Atotonilco, S. A.

SPECIAL

► *Bad Order Ratio 1.1% Higher Than Last Year.*—Class I roads on July 1 owned 1,637,703 freight cars, 36,124 less than last year, according to AAR report summarized below; bad order ratio was 1.1% higher than on July 1, 1960.

	July 1, 1961	July 1, 1960	Change
Car ownership	1,637,703	1,673,827	—36,124
Waiting repairs	151,901	137,924	+13,977
Repair ratio	9.3%	8.2%	+ 1.1%

New Facilities

► *Southern Pacific.*—Has begun multi-phase improvement project at Sacramento Yards including modernization of a downtown team track, installation of freight-car washing and cleaning facility, extension of switching tracks, relocation of main line tracks through yards and construction of yardmaster's tower. Project is slated for completion in early 1962.

ICC Suspends Grain-Rate Cuts

The ICC has suspended the controversial reduced rail rates proposed by the Southern and other southeastern railroads on grain moving in multiple-car lots between points in Southern Territory.

The reductions would have ranged from 60% to 65% below present carload rates. Opponents charged that the rates, which were scheduled to have gone into effect Aug. 10, would have had a disruptive effect on the grain rate structure in the South.

ICC suspension of the railroads' reduced grain rates was "more or less to be expected," commented Southern Executive Vice President D. W. Brosnan, "since this is the time for the registering of protests rather than for affirmative action. It is evident that the proponents for the maintenance of higher rates at the public expense were quite vociferous."

Mr. Brosnan went on to say, however, that, "in due season, the ICC will undoubtedly schedule the matter for hearing at which time the issues can and will be gone into thoroughly. We have every confidence that in the end the finding will be that the public is entitled to these reduced rates rather than that a few selfish interests can continue to profit at the public expense."

Mr. Brosnan undoubtedly referred to the many protests concerning the rates that were filed with the ICC. The reductions being substantial, many feared that they would change the existing pattern of grain distribution.

Among the protestants were the American Waterways Operators (RA, Aug. 7, p. 37), a variety of shippers, other railroads, and similar interested groups. Much support was also recorded, however, including unanimous resolutions from the Southern Governors' Conference and the Southeastedn Association of Railroad and Utilities Commissioners.

Southern had replied to the protesting petitions that "it is inconceivable that under 'equal laws' a railroad can be denied the right to use its facilities under regulated rates to meet the competition it faces from unregulated rates."

The railroad said that the low rates represented its determined approach to pricing freight services to regain traffic now handled by unregulated carriers, both barge and truck. Southern also pointed out that grain is an exempt commodity which moves without regulation by all means of surface transportation except rail.

Southern argued that, if it "is to continue to exist in the face of the rapid rise in unregulated transportation, it can only do so by utilizing its inherent advantage as a mass transportation agency."

The proposed 60% to 65% reduction below present carload rates would have applied after Aug. 10 on all types of grain moving in multiple-car lots of 450, 900, and 1,800 tons. The rate from St. Louis to Chattanooga, for example, would have been reduced from $8.50 per ton to $3.10 per ton on lots of 450 tons. On 900 tons, the new rate would have been $3.00 and it would have been $2.90 on 1,800 tons.

Among the arguments advanced by those protesting the rates were charges that they:

- Bore an unreasonable relationship to the single-carload rates on grain moving between the same points.
- Would have a distruptive effect upon the grain rate structure in the South, since they would not have applied to all destinations—thus creating unreasonable preferences, and they would have discriminated against smaller shippers.

How 37 Roads Performed

The freight-service operating ratio of Class I railroads (ratio of total operating expenses to total operating revenues) climbed to 72.9% last year from 1959's 71.1%. At the same time, the passenger-service operating ratio declined—to 126.7% in 1960 from 130.6% in 1959. Here's how 37 selected railroads performed, as reported by the ICC's Bureau of Transport Economics and Statistics:

Road	Freight Service	Passenger and Allied Services
EASTERN DISTRICT		
Baltimore & Ohio	77.04	139.99
Boston & Maine	70.21	142.22
Delaware & Hudson	78.19	136.08
New York Central	79.20	103.00
Nickel Plate	69.82	161.98
Pennsylvania	76.80	105.82
Pittsburgh & Lake Erie	91.93	331.64
Reading	76.72	152.70
Wabash	74.36	122.91
POCAHONTAS REGION		
Chesapeake & Ohio	72.97	174.48
Norfolk & Western	56.46	158.18
SOUTHERN REGION		
Atlantic Coast Line	73.81	117.50
CNO&TP	77.88	115.06
Clinchfield	65.23	30.82
Gulf, Mobile & Ohio	75.53	121.37
Illinois Central	74.19	125.18
Louisville & Nashville	75.61	144.30
Seaboard Air Line	70.04	125.37
Southern	61.67	143.72
WESTERN DISTRICT		
AT&SF	70.14	130.24
Chicago & North Western	80.23	134.70
CB&O	71.79	128.41
CMStP&P	72.83	139.04
CRI&P	70.23	136.86
D&RGW	58.55	181.78
DM&IR	72.50	1083.28
Great Northern	70.06	174.22
Kansas City Southern	53.05	171.53
MStP&SSM	77.28	255.79
Missouri Pacific	70.36	137.07
Northern Pacific	74.50	193.01
St. Louis-San Francisco	74.30	168.78
StLSW	63.98	— *
Southern Pacific	71.51	155.56
Texas & Pacific	70.53	135.69
Union Pacific	62.86	147.52
Western Pacific	73.67	178.49

*After operating expenses and rent income and rents payable on passenger-train cars, there was a net railway operating income from passenger and allied service of $70.207.

Donald F. Marston
GN

George H. Kronberg
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Wilbert F. Calliott will head the systems design activities at Richmond.

CHICAGO & EASTERN ILLINOIS. — Roland H. Hazlett appointed traffic representative, Minneapolis, succeeding **Gene A. Tonsager,** promoted to assistant freight sales manager, Portland, Ore.

CHICAGO & NORTH WESTERN.—Elmer A. Alexy appointed district sales manager, Milwaukee, Wis. **John H. Bonawitz** named sales agent, Marshall, Minn.

COTTON BELT.—H. Clarke Roberts, freight traffic manager, St. Louis, retired July 31.

ELGIN, JOLIET & EASTERN.—V. W. Kraetsch appointed executive assistant.

Robert V. Dangremond, roadmaster, Gary Ind., named to the newly created position of division engineer, Gary.

ERIE-LACKAWANNA.—R. Curtis Clark, assistant auditor—mechanized accounting, appointed assistant treasurer, Cleveland, Ohio.

FRISCO.—H. J. Lovelady, superintendent, Eastern division, Springfield, Mo., appointed general superintendent transportation there. **H. C. Bitner,** superintendent, Southern division, Amory, Miss., succeeds Mr. Lovelady, and in turn is replaced by **J. F. Christian,** superintendent, Central division and district manager-sales, Fort Smith, Ark. Mr. Christian's successor is **T. M. Mabon, Jr.**

C. W. Martin, auditor-revenues, St. Louis, retired July 31. Duties of auditor-revenues assumed by **E. M. Peak,** assistant controller, St. Louis, who has been named assistant controller-revenues.

Craig Taylor, district manager sales, Shreveport, La., transferred to New Orleans, to succeed **O. P. Rainey, Jr.,** named general foreign freight agent, St. Louis. **George D. Neff,** district manager sales, Buffalo, N. Y., replaces Mr. Taylor.

J. H. Brown, assistant chief engineer, Springfield, Mo., appointed chief engineer there, to succeed **B. H. Crosland,** retired. Jurisdiction of **O. E. Fort,** assistant chief engineer, Springfield, extended to include the Western district.

GREAT NORTHERN.—Donald F. Marston, assistant to the chief mechanical officer, appointed superintendent of motive power, succeeding **John G. German,** resigned. Mr. Marston's successor is **Richard G. Tausch,** shop superintendent, Hillyard, Wash., who in turn is replaced by **Lawrence R. Seaholm,** transferred from Havre, Mont. **Kenneth W. Batcheller,** master mechanic, Great Falls, Mont., replaces Mr. Seaholm, and in turn is replaced by **Eugene C. Coan,** mechanical assistant, Kalispell division.

ILLINOIS CENTRAL.—D. C. Burcham named trainmaster, Chicago division, replacing **J. A. McDaniel,** resigned.

INTERSTATE COMMERCE COMMISSION.—William B. Hammer, assistant director, Bureau of Traffic, and chief of the Section of Rates and Informal Cases, Washington, D. C., retired Aug. 5.

JERSEY CENTRAL.—Office of **William D. Wakeman,** general freight agent, Elizabeth, N. J., has been moved to the Jersey Central Terminal, Jersey City 2, N. J.

LOUISVILLE & NASHVILLE.—G. M. Timberman, manager, coal sales and service, assigned supervision of the Coal Traffic Department, including sales, service and rates. **L. C. Goering** named assistant to vice president-traffic, and will be in charge of the road's coal development program.

MILWAUKEE. — George H. Kronberg, traffic manager, Seattle, appointed director of public relations and advertising, Chicago, effective Sept. 1, to succeed **Walter A. Dietze,** retiring.

Earl E. White, assistant to traffic manager, Seattle, named general foreign freight agent, Chicago, succeeding **Wesley S. McKee,** appointed assistant to vice president-traffic, Chicago.

L. H. Walleen, superintendent, Rocky Mountain division, Deer Lodge, Mont., transferred to the Iowa, Minnesota & Dakota division, Austin, Minn., succeeding **J. T. Hansen,** retired. Mr. Walleen's successor is **M. T. Sevedge,** assistant superintendent, Dubuque & Illinois division, Savanna, Ill., who in turn is replaced by **G. A. Chamberlain,** trainmaster, Harlowton, Mont. **A. C. Novak,** superintendent, Iowa division, Perry, Iowa, transferred to the Dubuque & Illinois division, Savanna,

(Continued on following page)

pensatory, if it promised to [illegible] more than what the Commission regarded as a "fair share" of available traffic or, to put it another way, was thought to be "lower than necessary to meet the competition." Such a test was properly thought to be most unfortunate, and unsound; and its use was repeatedly condemned by railroad spokesmen and others.

At the very outset of the hearings conducted by the Senate Surface Transportation Subcommittee in January 1958 (the hearings that eventually produced the Transportation Act of 1958), for example, Mr. Daniel P. Loomis, president of the Association of American Railroads, had this to say:

> "In their competition with other forms of transportation railroads are not infrequently prevented by the Interstate Commerce Commission from making reduced rates that fully reflect their advantage as the low-cost form of transportation. Rates, even though compensatory and nondiscriminatory as among shippers, are often con-

American Railroads, had this to say on the point with which we are now dealing:

> "The second additional restriction that S.1197 would impose . . . is that the ICC must consider 'the competitive necessity for the rate' and reject the proposal that fails to qualify in its opinion. But certainly this is not the kind of question that should be resolved by a government body located in Washington, D. C. To deal with it realistically, intimate knowledge that can be acquired only from experience gained on the ground is necessary. Moreover, to impose such a responsibility on the ICC would effectively oust management from one of the few areas where it is still supposed to function. For if management cannot decide as to the competitive necessity for a rate adjustment, there is no point in trying to continue the notion that railroads in the United States are privately owned and operated."

It seems to me, then, that the proposal contained in your editorial to "define 'just and reasonable' rates and practices to include any that are necessary to meet competition from other forms of transportation" has certain dangers. I would be concerned about

To the Editor:

We feel the information contained in the article "How New Mail Sorters Help Cut Railroad Terminal Costs" (RA, July 3, p. 14) will be very beneficial to your readership in their modernization programs. Your publication certainly does a very fine job in conveying valuable information to the railroad industry. We have requested reprints of this article for distribution to our Sales organization and interested prospects.

We will keep you informed as to any new developments pertaining to the "Quik-Tip" Sorter and its application to the railroad market.

Walter Schwarting
Marketing Manager
Speaker Sortation Systems, Inc.

Portland Cement Association 23
Standard Car Truck Co. 23
Stran-Steel Corp. 20, 21
Symington Wayne Corp., Symington Division ..... IFC
Union Switch & Signal Div. of Westinghouse Air Brake Co. 4
United States Steel Corp., Witte Engine Works Div. 25
Vapor Heating Corp. ..... BC

Anzac Square
Brisbane, Australia

to succeed **A. O. Thor,** retired. Mr. Novak's successor is **Martin Garelick,** transferred from the Aberdeen division, Aberdeen, S. D., who in turn is replaced by **R. H. Love,** superintendent, Milwaukee Road-Kansas City Southern Joint Agency, Kansas City, Mo. **J. W. Stuckey,** assistant superintendent, Iowa division, Marion, Iowa, replaces Mr. Love, and in turn is replaced by **S. O. Jones,** trainmaster, LaCrosse, Wis.

D. P. Valentine, superintendent of transportation, Chicago, appointed general superintendent of transportation there, succeeding **V. P. Sohn,** who retired June 30. **Q. W. Torpin,** superintendent of transportation, Tacoma, Wash., succeeds Mr. Valentine, and in turn is replaced by **R. E. Beck,** trainmaster, Coast division, Tacoma. Mr. Beck's successor is **C. D. Anderson,** train rules examiner, Milwaukee, Wis.

MINNEAPOLIS, NORTHFIELD & SOUTHERN.—**C. E. Frank,** general agent, Seattle, Wash., trans-

July 10, p. 38). **L. W. Brew,** superintendent—office division, New York, appointed superintendent, Pennsylvania-West Virginia division, Pittsburgh. **James A. Ternan,** assistant eastern sales manager, New York, appointed district sales manager, Philadelphia.

Harold F. Wiegert appointed to the newly created post of Alaskan manager, Anchorage. Mr. Wiegert was formerly supervisor of terminal and vehicle service in Denver, Colo.

James A. Warren appointed assistant to president, New York.

The Public Relations division, under **Richard A. Strickland,** director has been transferred from the Traffic department to the Executive department, New York.

Joseph A. Papa, vice president, Mountain-Pacific region, San Francisco, Cal., appointed assistant vice president system operations, New York succeeding **Charles H. Campbell,** who replaces Mr. Papa in San Francisco.

SANTA FE.—**H. N. Chastain,** master mechanic,

Eads Johnson, Jr.
Am. Brake Shoe

James R. Shepard
Am. Brake Shoe

Supply Trade

Eads Johnson, Jr., vice president of sales, Railroad Products Division, **American Brake Shoe Co.,** New York, has been named first vice president of that division. He will continue to direct all railroad product sales.

You Ought

C&NW wants to abandon 55.4 miles of track between Seward and Platte River, Neb., and acquire trackage rights over 29 miles of CB&Q line between Seward and Lincoln, Neb. An estimated

REA Express has added five countries—Ceylon, Ecuador, Morocco, Nicaragua and Tunisia—to its Through-Export-Bill-of-Lading service. The single-carrier service is now available between the U.S.

THE ACTION PAGE

Challenge to Rail Unions

The railway unions could have made—and still could make—a far greater contribution than they have yet, to the restoration of railroad prosperity (and, consequently, to their own security and well-being).

This conclusion is unavoidable from observing the relative strength of at least the more substantial concerns in the coal business—and the contribution the Miners' Union has made to that result. Employment in the mines has declined drastically, but the Miners' Union has a strong treasury, wage standards of employed miners are high, and benefit payments to the unemployed have been generous.

The leadership of the Miners' Union appears to have had the perceptivity to understand that coal has been engaged in a fight for its economic life. The competition of oil and gas was inevitably going to destroy a lot of jobs in the mines. The Miners' Union had the choice of seeing these jobs disappear in a bankrupt industry—unable to pay good wages or unemployment benefits. Or, as an alternative, it could cooperate with the able and substantial managements in the industry to make mining an efficient business, with relatively low costs despite high wages.

A writer on unionism, A. H. Raskin, in a recent issue of the Atlantic Monthly, observed that "the miners are rich in memories and in money, poor in members. . . . The industry in which they operate has become an industry of machines, not of men. Employment in the soft-coal field has gone down from 700,000 to fewer than 200,000 in the four decades since World War I."

The important point to be noted is that there was nothing the union could have done to have avoided that decline in employment. "Make-work" rules and other such expedients would not have saved jobs and would have served only to increase further the competitive cost of coal. "Make-work" would have destroyed, certainly, at least as many jobs as mine mechanization has done. And job loss through inefficiency and high costs would have confronted the industry and the union with bankruptcy, on top of disappearance of employment.

The result of the union's hospitality toward technological improvement—reports writer A. H. Raskin in his article—is that the mine price of coal has been kept relatively steady in a period of inflation, and inroads of oil and gas among some large fuel users (notably the utilities) have been checked. The union's leadership has been smart enough, also, to abandon its former practice of frequent strikes—since the utilities "are equipped to convert almost instantaneously from coal to oil or gas, and have made it plain that any irregularity in coal deliveries will cause a permanent shift to these rival sources of energy."

In the railroad business, managements and unions are confronted with problems parallel to those of the coal business (only worse, in that government doesn't put its heavy foot on the scale in behalf of coal's competitors, the way it does for competitors of the railroads). If there has been any action on the part of the railroad unions to parallel the realistic program of the Miners' Union, we've failed to notice it. Indeed, in recent years the practices of some of the railroad unions have indicated no appreciation whatever of the precarious competitive position of the railroads. For example, consider the railroad strikes of the past year or so, over completely trivial issues.

In order to get back on the track that leads to prosperity, and to rising traffic and employment, the railroad industry must have a fair shake from government. It also needs much more realistic internal behavior—on the unions' part as well as on that of managements. There is a lot of inter-railroad rivalry and a lot of inter-union rivalry which add greatly to the difficulties confronting the railroads—which already have their hands full because of the Jim Crow treatment they get from government.

TOO MANY RAILROADS . . . AND UNIONS

Managements of individual railroads are handicapped by the fact that there are so many railroads—and that each management is employed, not primarily to promote the welfare of the railroad industry as a whole, but to serve the interests of one company. Similarly with the unions—the officers of each are not employed to further the interests of the railway industry or railway labor as a whole. Rather their concern lies mostly, if not entirely, with the immediate welfare of a particular craft.

Railroad managements are seeking, through merger efforts, to correct the disabilities they suffer because there are too many of them. Railroad union leaders should recognize their interest in railroad consolidation, and also that their long-run interest would be best served by merging their unions.

This paper is unable to believe that railroad managements and railroad union leaders are less perceptive than the coal operators and the Miners' Union; or to believe that railroad and union leadership will fail to apply in railroading somewhat the same sort of program that has saved the coal business from extinction. Inherently, railroading has far greater competitive potential as against rival agencies of transportation than coal has against rival fuels.

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GN

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Millwaukee

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R. Paul Williams, chief systems designer, appointed assistant general superintendent—data processing services, Huntington, W. Va. **L. A. Gehringer** named chief car distributor, Huntington, succeeding **E. M. Burke,** retired. **C. E. Clay** appointed scale inspector, succeeding **H. R. Slack,** retired.

Wilbert F. Calliott will head the systems design activities at Richmond.

CHICAGO & EASTERN ILLINOIS. — Roland H. Hazlett appointed traffic representative, Minneapolis, succeeding **Gene A. Tonsager,** promoted to assistant freight sales manager, Portland, Ore.

CHICAGO & NORTH WESTERN.—Elmer A. Alexy appointed district sales manager, Milwaukee, Wis. **John H. Bonawitz** named sales agent, Marshall, Minn.

COTTON BELT.—H. Clarke Roberts, freight traffic manager, St. Louis, retired July 31.

ELGIN, JOLIET & EASTERN.—V. W. Kraetsch appointed executive assistant.

Robert V. Dangremond, roadmaster, Gary Ind., named to the newly created position of division engineer, Gary.

ERIE-LACKAWANNA.—R. Curtis Clark, assistant auditor—mechanized accounting, appointed assistant treasurer, Cleveland, Ohio.

FRISCO.—H. J. Lovelady, superintendent, Eastern division, Springfield, Mo., appointed general superintendent transportation there. **H. C. Bitner,** superintendent, Southern division, Amory, Miss., succeeds Mr. Lovelady, and in turn is replaced by **J. F. Christian,** superintendent, Central division and district manager-sales, Fort Smith, Ark. Mr. Christian's successor is **T. M. Mabon, Jr.**

C. W. Martin, auditor-revenues, St. Louis, retired July 31. Duties of auditor-revenues assumed by **E. M. Peak,** assistant controller, St. Louis, who has been named assistant controller-revenues.

Craig Taylor, district manager sales, Shreveport, La., transferred to New Orleans, to succeed **O. P. Rainey, Jr.,** named general foreign freight agent, St. Louis. **George D. Neff,** district manager sales, Buffalo, N. Y., replaces Mr. Taylor.

J. H. Brown, assistant chief engineer, Springfield, Mo., appointed chief engineer there, to succeed **B. H. Crosland,** retired. Jurisdiction of **O. E. Fort,** assistant chief engineer, Springfield, extended to include the Western district.

GREAT NORTHERN.—Donald F. Marston, assistant to the chief mechanical officer, appointed superintendent of motive power, succeeding **John G. German,** resigned. Mr. Marston's successor is **Richard G. Tausch,** shop superintendent, Hillyard, Wash., who in turn is replaced by **Lawrence R. Seaholm,** transferred from Havre, Mont. **Kenneth W. Batcheller,** master mechanic, Great Falls, Mont., replaces Mr. Seaholm, and in turn is replaced by **Eugene C. Coan,** mechanical assistant, Kalispell division.

ILLINOIS CENTRAL.—D. C. Burcham named trainmaster, Chicago division, replacing **J. A. McDaniel,** resigned.

INTERSTATE COMMERCE COMMISSION.—William B. Hammer, assistant director, Bureau of Traffic, and chief of the Section of Rates and Informal Cases, Washington, D. C., retired Aug. 5.

JERSEY CENTRAL.—Office of **William D. Wakeman,** general freight agent, Elizabeth, N. J., has been moved to the Jersey Central Terminal, Jersey City 2, N. J.

LOUISVILLE & NASHVILLE.—G. M. Timberman, manager, coal sales and service, assigned supervision of the Coal Traffic Department, including sales, service and rates. **L. C. Goering** named assistant to vice president-traffic, and will be in charge of the road's coal development program.

MILWAUKEE. — George H. Kronberg, traffic manager, Seattle, appointed director of public relations and advertising, Chicago, effective Sept. 1, to succeed **Walter A. Dietze,** retiring.

Earl E. White, assistant to traffic manager, Seattle, named general foreign freight agent, Chicago, succeeding **Wesley S. McKee,** appointed assistant to vice president-traffic, Chicago.

L. H. Walleen, superintendent, Rocky Mountain division, Deer Lodge, Mont., transferred to the Iowa, Minnesota & Dakota division, Austin, Minn., succeeding **J. T. Hansen,** retired. Mr. Walleen's successor is **M. T. Sevedge,** assistant superintendent, Dubuque & Illinois division, Savanna, Ill., who in turn is replaced by **G. A. Chamberlain,** trainmaster, Harlowton, Mont. **A. C. Novak,** superintendent, Iowa division, Perry, Iowa, transferred to the Dubuque & Illinois division, Savanna,

(Continued on following page)

to succeed **A. O. Thor,** retired. Mr. Novak's successor is **Martin Garelick,** transferred from the Aberdeen division, Aberdeen, S. D., who in turn is replaced by **R. H. Love,** superintendent, Milwaukee Road-Kansas City Southern Joint Agency, Kansas City, Mo. **J. W. Stuckey,** assistant superintendent, Iowa division, Marion, Iowa, replaces Mr. Love, and in turn is replaced by **S. O. Jones,** trainmaster, LaCrosse, Wis.

D. P. Valentine, superintendent of transportation, Chicago, appointed general superintendent of transportation there, succeeding **V. P. Sohn,** who retired June 30. **Q. W. Torpin,** superintendent of transportation, Tacoma, Wash., succeeds Mr. Valentine, and in turn is replaced by **R. E. Beck,** trainmaster, Coast division, Tacoma. Mr. Beck's successor is **C. D. Anderson,** train rules examiner, Milwaukee, Wis.

MINNEAPOLIS, NORTHFIELD & SOUTHERN.—C. E. Frank, general agent, Seattle, Wash., transferred to Portland, Ore., a new agency. **A. J. Menard,** traveling freight agent, Seattle, promoted to general agent, San Francisco, succeeding **Ward J. Edwards,** who retires Aug. 31.

MISSOURI-KANSAS-TEXAS.—George G. Walker appointed general attorney and **James A. Myers,** assistant general attorney, both at Denison, Tex.

NICKEL PLATE.—Howard Odom, general yardmaster, Indianapolis, Ind., appointed superintendent of safety, Cleveland, Ohio, succeeding **Roy C. Sabens,** who retired because of ill health.

NORFOLK & WESTERN.—Russell R. McDaniel, master mechanic, Norfolk division, transferred to the Pocahontas division, Bluefield, W. Va., July 1, succeeding **Wallace M. Tucker,** who died June 21. **Walter A. Grigg,** electrical engineer, Roanoke, succeeds Mr. McDaniel and is succeeded by **Edwin H. Werner,** assistant electrical engineer. **Russell S. White,** electrical-inspector, named mechanical inspector.

Horace K. Mackan, commercial agent, freight traffic office, Norfolk, appointed district freight agent there.

NORTHERN PACIFIC.—L. S. Davis, general freight agent — rate department, Seattle, Wash., promoted to western freight traffic manager—rates and divisions.

J. D. Krohne, assistant superintendent, Como shops, St. Paul, Minn., appointed assistant to mechanical engineer, general offices, St. Paul. **A. A. Richter,** engineer of electrical equipment, office of mechanical engineer, succeeds Mr. Krohne.

Joseph A. Horrall named agricultural development agent, St. Paul, succeeding **A. J. Dexter,** who retired Aug. 1. Mr. Horrall was formerly on the sales staff, Midland Feed Co., Billings, Mont.

REA EXPRESS.—Hugh Graef, superintendent, Philadelphia division, appointed assistant to vice president, Eastern region, New York, succeeding **Henry T. Ridlehoover,** named assistant general manager, New York City divisions, replacing **F. E. Horning,** retired. **Frank J. Fagan,** general manager, New York City divisions, appointed general manager, Eastern Lakes divisions, Detroit, succeeding **F. T. Halligan** (RA, July 10, p. 38). **J. F. Goodson,** superintendent, St. Louis division, transferred to the New York City Terminal division, succeeding **James J. Callan** (RA, July 10, p. 38). **L. W. Brew,** superintendent—office division, New York, appointed superintendent, Pennsylvania-West Virginia division, Pittsburgh. **James A. Ternan,** assistant eastern sales manager, New York, appointed district sales manager, Philadelphia.

Harold F. Wiegert appointed to the newly created post of Alaskan manager, Anchorage. Mr. Wiegert was formerly supervisor of terminal and vehicle service in Denver, Colo.

James A. Warren appointed assistant to president, New York.

The Public Relations division, under **Richard A. Strickland,** director has been transferred from the Traffic department to the Executive department, New York.

Joseph A. Papa, vice president, Mountain-Pacific region, San Francisco, Cal., appointed assistant vice president system operations, New York succeeding **Charles H. Campbell,** who replaces Mr. Papa in San Francisco.

SANTA FE.—H. N. Chastain, master mechanic, Kansas City and Eastern divisions, Argentine, Kan., appointed general assistant, mechanical department, Topeka, Kan. His successor is **J. F. Kanive** (RA, July 10, p. 38).

W. W. Toliver appointed office engineer, Coast Lines, Los Angeles.

C. B. Kurtz, superintendent, New Mexico Division, Las Vegas, N. M., named superintendent, Colorado Division, Pueblo, Colo., replacing **G. A. Alexander,** transferred. Mr. Kurtz retains jurisdiction over the First, Second, Third, Santa Fe and Rocky Mountain districts of the New Mexico Division. **W. A. J. Carter,** superintendent, Pecos Division, Clovis, N. M., also named superintendent, El Paso district (including Albuquerque Terminal), Magdalena, Deming, Santa Rita and Fierro districts, New Mexico Division, Las Vegas.

D. R. Weems, on leave of absence (RA, June 26, p. 66), has resumed as superintendent of communications, Topeka, Kan.

SEABOARD.—Robert E. Northup, senior general attorney, appointed general solicitor, Richmond, Va., succeeding **Charles T. Abeles,** retired.

W. H. Edmunds, superintendent, **Tavares & Gulf,** wholly-owned subsidiary of the Seaboard, retired July 31. Mr. Edmunds' duties have been taken over by **L. C. Bates,** superintendent, Seaboard's North Florida division. Jacksonville.

C. E. Lloyd appointed district freight agent, Macon, Ga., succeeding **W. W. Miller,** retired.

SOO LINE.—H. E. Lundberg, auditor of passenger and station accounts, and **C. N. Stewart,** assistant auditor of passenger and station accounts, retired Aug. 1. The passenger and station accounting department has been coordinated with the freight accounting department and **John R. Koch** named auditor of revenues, Minneapolis, with jurisdiction over the entire revenue department.

SOUTHERN PACIFIC.—H. R. Svihus named secretary, board of pensions, San Francisco, replacing **H. E. Alsing,** retired (RA, July 24, p. 42).

Robert A. Lathrop named senior assistant division engineer, Coast Division, San Francisco.

UNION PACIFIC.—R. R. Lines, assistant to general land and tax commissioner, named general land and tax commissioner, succeeding **J. F. Holst,** retired.

Eads Johnson, Jr.
Am. Brake Shoe

James R. Shepard
Am. Brake Shoe

Supply Trade

Eads Johnson, Jr., vice president of sales, Railroad Products Division, **American Brake Shoe Co.,** New York, has been named first vice president of that division. He will continue to direct all railroad product sales. **James R. Shepard,** works manager, brake shoe department, Railroad Products Division, has been appointed vice president of manufacturing for that division.

James G. Duggan, assistant secretary and attorney, **Crane Co.,** Chicago, has been elected secretary and treasurer, **Fansteel Metallurgical Corp.,** North Chicago, Ill., succeeding **John S. Jaronik,** retired.

C. W. Lindstrom, general manager, **Enterprise Railway Equipment Co.,** has been elected an officer of the company and promoted to vice president and general manager. **John Dewar** has been named sales manager.

Raytheon Co., Distributor Products Division, Westwood, Mass., has appointed **Graybar Electric Co.,** as a nationwide distributor of their industrial electron tubes, semi-conductors, voltage regulators and other electronic components.

Gerald L. Phillippe, comptroller and principle financial officer, **General Electric Co.,** has been elected president and director. **Cramer W. LaPierre,** vice president and group executive in charge of the Electronic and Flight Systems Group, has been elected executive vice president and director.

John C. Day, assistant vice president in charge of the New York and Philadelphia sales offices, Transportation Equipment Division, **American Steel Foundries,** has been transferred to the Chicago general office. Mr. Day will assist **W. C. Taylor,** sales vice president, in the administration of all division sales activities. **Roger G. Kimber,** assistant vice president, Chicago, has assumed charge of the two Eastern sales offices at New York.

OBITUARY

George H. Minchin, 79, retired senior vice president, **Santa Fe,** Chicago, died July 29 at Peoria, Ill.

Raymond J. Wood, 69, who retired in Jan. 1956 as freight traffic manager, **Pennsylvania,** New York, died July 29 in St. Petersburg, Fla.

Orlin H. Clark, 59, field manager, railway division, **Oakite Products, Inc.,** died of pneumonia on July 21.

LETTERS FROM READERS

'Just and Reasonable' Rates

Washington, D.C.

To the Editor:

The Action Page editorial in your July 31, 1961, issue ("Do Shippers Need the ICC?") states:

"To begin the job of modernizing the Interstate Commerce Act, we would define 'just and reasonable' rates and practices to include any that are necessary to meet competition from other forms of transportation."

Although one cannot be certain without seeing and reflecting upon whatever specific statutory approach and language may be contemplated by way of implementation of this suggestion, I fear that you are approaching treacherous and potentially dangerous ground in advocating an intermodal competitive ratemaking criterion relating to "competitive necessity."

In the long series of Congressional hearings that finally led, in 1958, to enactment of the present rule of competitive ratemaking found in section 15a(3) of the Interstate Commerce Act, a principal complaint of the railroads and others dissatisfied with the regulatory policies and principles then applied to intermode rate competition was that the Interstate Commerce Commission tended to use as one of its yardsticks in determining whether reduced rates would be permitted to go into effect the test:

Is the reduced rate "lower than necessary to meet the competition" of another mode of transportation, thus enabling the carrier publishing it to secure or retain more than a "fair share" of the traffic?

Under this test, it was demonstrated, a rate proposed by a regulated carrier of one form of transport (for example, a railroad) was likely to be disapproved as less than a reasonable minimum rate, although admittedly compensatory, if it promised to attract more than what the Commission regarded as a "fair share" of available traffic or, to put it another way, was thought to be "lower than necessary to meet the competition." Such a test was properly thought to be most unfortunate, and unsound; and its use was repeatedly condemned by railroad spokesmen and others.

At the very outset of the hearings conducted by the Senate Surface Transportation Subcommittee in January 1958 (the hearings that eventually produced the Transportation Act of 1958), for example, Mr. Daniel P. Loomis, president of the Association of American Railroads, had this to say:

"In their competition with other forms of transportation railroads are not infrequently prevented by the Interstate Commerce Commission from making reduced rates that fully reflect their advantage as the low-cost form of transportation. Rates, even though compensatory and nondiscriminatory as among shippers, are often condemned as less than reasonable minimum rates on the ground that they would tend to upset the competitive balance between the railroads and a competing form of transportation. The Commission, in its efforts to maintain what is necessarily an artificial competitive balance between the rates of the several modes, is often found to say that a proposed rate is 'lower than necessary to meet the competition' and hence unreasonable. . . .

"This approach to ratemaking operates to deprive the railroads of their principal inherent competitive advantage, low cost, and denies the public the benfits of that inherent advantage. It results, we are convinced, in widespread diversion from the rails of traffic that would otherwise be on the rails and should be on the rails."

The Congress did not see fit to enact the precise remedial proposal then supported by the railroads ("In the exercise of its power to determine and prescribe just and reasonable rates . . . the Commission shall not consider . . . whether such rates are lower than necessary to meet the competition of any other mode of transportation.") but the objective of the competitive rate rule in present section 15a (3) of the Interstate Commerce Act, which did evolve, is the same.

As you know, strenuous efforts are now being made by the railroads' competitors and their employee groups to turn back the clock in this regard through emasculatory amendment of the competitive rate rule. I refer, of course, to S.1197 (the so-called Bartlett bill). That bill, vigorously opposed by the railroads and shippers, provides among other things that:

"In a proceeding involving competition between carriers of different modes of transportation . . . the Commission, in determining whether a rate is lower than a reasonable minimum rate, shall consider, among other factors . . . *the competitive necessity for the rate* . . ." (emphasis supplied).

The railroad industry is of course unalterably opposed to this proposed legislation; and in recent testimony before the Senate Commerce Committee Mr. Jervis Langdon, Jr., president of the Baltimore & Ohio Railroad Company, speaking for the Association of American Railroads, had this to say on the point with which we are now dealing:

"The second additional restriction that S.1197 would impose . . . is that the ICC must consider 'the competitive necessity for the rate' and reject the proposal that fails to qualify in its opinion. But certainly this is not the kind of question that should be resolved by a government body located in Washington, D. C. To deal with it realistically, intimate knowledge that can be acquired only from experience gained on the ground is necessary. Moreover, to impose such a responsibility on the ICC would effectively oust management from one of the few areas where it is still supposed to function. For if management cannot decide as to the competitive necessity for a rate adjustment, there is no point in trying to continue the notion that railroads in the United States are privately owned and operated."

It seems to me, then, that the proposal contained in your editorial to "define 'just and reasonable' rates and practices to include any that are necessary to meet competition from other forms of transportation" has certain dangers. I would be concerned about a possible kind of "reverse English." I hasten however to repeat what I said at the start of this letter, that one would have to consider the specific statutory approach and language before reaching any final conclusion.

Let me say, in closing, that what I have written reflects only my personal views on this matter. Let me say, too, something I should have said at the start: that I wholeheartedly congratulate you upon the editorial of which I have been writing. I consider it an excellent piece of thinking and writing, and have intended to urge caution only as to the one feature mentioned.

Harry J. Breithaupt, Jr.
General Attorney, AAR

[We are just as concerned as Mr. Breithaupt is that railroads' freedom in rate-making be not further curtailed. We believe instead that such freedom should be greatly extended—e.g., by removing the "national transportation policy" clause from Sec. 15a(3). To add to railroads' rate-making freedom, it seems to us that they must have the right to make rates down to a "floor" of direct costs where they have competition to meet—without shippers of the same commodity to destinations where transportation competition is less severe having the privilege of complaining that the higher rates they pay are "discriminatory." That was the purpose of the suggestion we made which Mr. Breithaupt questions—and we are glad he did so, because we don't want anyone to suspect for a moment that we are anything less than advocates of all-out freedom of railroads in their rate-making.—Editor]

Reprints Requested

To the Editor:

We feel the information contained in the article "How New Mail Sorters Help Cut Railroad Terminal Costs" (RA, July 3, p. 14) will be very beneficial to your readership in their modernization programs. Your publication certainly does a very fine job in conveying valuable information to the railroad industry. We have requested reprints of this article for distribution to our Sales organization and interested prospects.

We will keep you informed as to any new developments pertaining to the "Quik-Tip" Sorter and its application to the railroad market.

Walter Schwarting
Marketing Manager
Speaker Sortation Systems, Inc.

You Ought To Know...

Railroad employment was up .83% in mid-July, compared with June, according to the ICC's Bureau of Transport Economics and Statistics. Largest rise, 2.04%, was recorded in the Maintenance of Way and Structures category.

Great Northern reopened its Dale Street shop in St. Paul Aug. 7, recalling 299 employees who were furloughed July 17. GN has made no plans to reopen its Jackson Street shop in St. Paul, closed June 1, or the St. Cloud, Minn., car shop, closed July 31.

Order for 125 aluminum mine cars has been placed by a major coal producer with Irwin-Sensenich Corp. of Irwin, Pa., following successful trial runs of 20 experimental cars placed in service a year ago (RA, Oct. 3, 1960, p. 17). Cars weigh about three tons apiece, are constructed of aluminum plate and extrusions supplied by Alcoa.

Communications—machine to machine, man to machine, and man to man—will be the theme for the 1961 fall meeting of Railway Systems & Management Assn. in Chicago. A limited number of manufacturers will be provided with exhibit space during the Nov. 15-17 meeting. Applications for space are presently being received by RSMA.

The Supreme Court has been asked by RLEA to reopen a case involving the right of railroad unions to strike to enforce those awards handed down by the National Railroad Adjustment Board with which the carriers refuse to abide. A slated strike by members of the BRT to enforce two such awards against the D&RGW has been forbidden by the lower federal courts, which the Supreme Court has refused to review.

C&NW wants to abandon 55.4 miles of track between Seward and Platte River, Neb., and acquire trackage rights over 29 miles of CB&Q line between Seward and Lincoln, Neb. An estimated $106,358 will be spent to construct track connections with Burlington at Seward and Lincoln if ICC approves.

California's PUC has ordered a thorough investigation of the state's 14,840 regulated rail, motor, air and water carriers with the view of compiling a record "upon which recommendations for legislation in the public interest might be based." Similar investigations in 1932, 1948 and 1949 led to revised transport laws.

Cleveland officials will go to Washington Aug. 18 to press their request for a $7-million federal grant to be used for a proposed rapid transit extension to Cleveland-Hopkins Airport.

Fourth revenue trip was recently completed by Polarstream liquid-nitrogen-refrigerated piggyback trailer owned by REA Leasing Corp. (RA, July 17, p. 33). To date only meat has been handled; shippers and carriers have reported complete satisfaction with process which holds frozen or fresh ladings at any desired temperature by releasing liquid nitrogen at minus 320 deg F into lading space. Latest run, 1,400 miles from St. Joseph, Mo., to Swift & Co., at New Brunswick, N. J., was made over Burlington and Pennsylvania.

Stainless steel passenger car built in France by Carel Fouche & Cie., a Budd Co. licensee, will be exhibited at the French Exposition in Moscow Aug. 15-Sept. 15. Car is owned by SNCF.

President Kennedy has asked Congress for $14.7 million for repayment of government-guaranteed loans which the New Haven negotiated prior to its bankruptcy.

A seven-nation container pool has gone into operation in Europe. Participating countries: Belgium, Germany, France, Luxembourg, Italy, Austria, Switzerland.

REA Express has added five countries—Ceylon, Ecuador, Morocco, Nicaragua and Tunisia—to its Through-Export-Bill-of-Lading service. The single-carrier service is now available between the U.S. and a total of 46 countries.

Automatic control of autos is envisioned in an "electronic highway" plan which Commerce Secretary Luther Hodges has asked his transportation experts to study. "Four or five" locations in heavily-populated areas are under consideration.

Applications for admission to Northwestern University's fourth annual Executive Seminar in Transportation Pricing Policy, Oct. 20 to Nov. 10, should be addressed to Dr. Eliezer Krumbein, assistant director of education of the Transportation Center, Evanston, Ill. Tuition is $500.

Canadian railroads are due to get about $29 million of a $50-million government subsidy this month, according to reports from Ottawa. Further payments will be made on a monthly basis during the remainder of the year. The subsidy was adopted as an interim measure pending implementation of recommendations of the Royal Commission on Transportation.

Automatic Switcher

Union Switch & Signal Co. is furnishing a remote control package to be installed in a new 600-hp switcher for a public service company plant in southern Arizona. The console-operated locomotive will be used with 92-ton longitudinal hopper cars especially built by the Santa Fe for unloading coal. The cars are equipped with three air motors, each controlling two dump gates. All gates are dumped at once by manually-operated four-way control valves on diagonal sides of the car. The locomotive will move loaded cars to dumping pit, apply brakes on car over pit, release brakes on empty car and move second car to dumping position. Santa Fe is building 60 cars for this service in company shops at Topeka, Kans.

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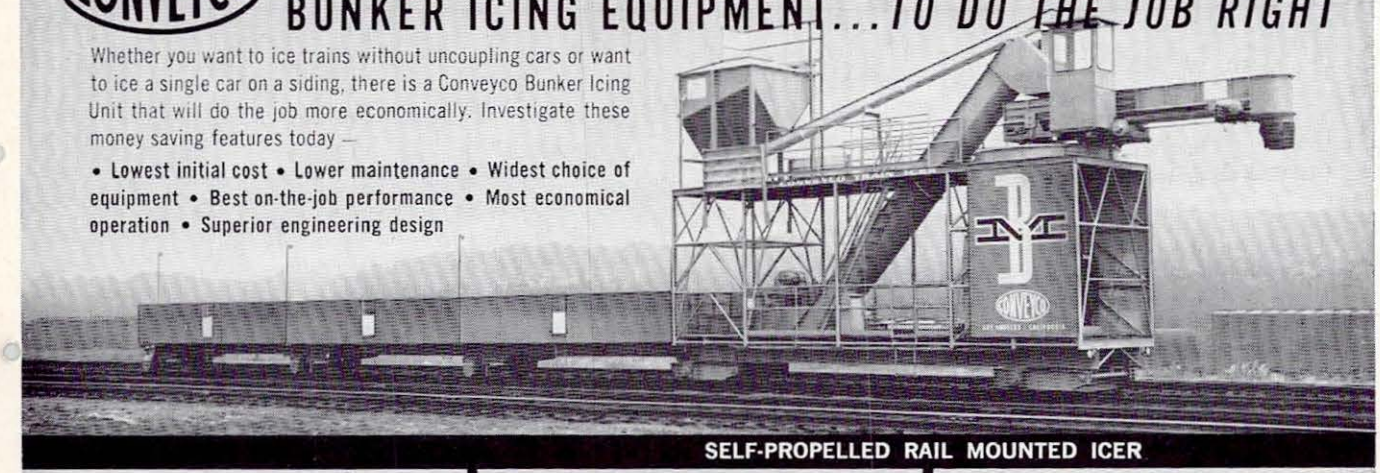

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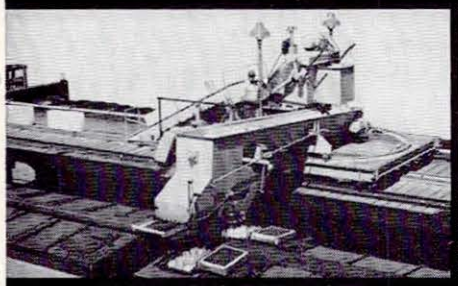

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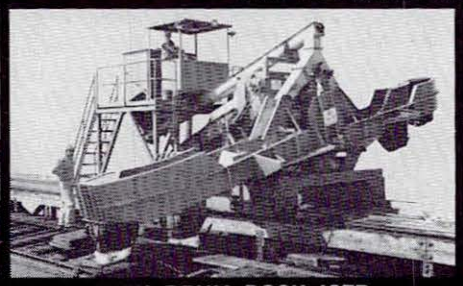

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G. W. W. CHALK
Minister for Transport
Railway Building
Anzac Square
Brisbane, Australia

Challenge to Rail Unions

The railway unions could have made—and still could make—a far greater contribution than they have yet, to the restoration of railroad prosperity (and, consequently, to their own security and well-being).

This conclusion is unavoidable from observing the relative strength of at least the more substantial concerns in the coal business—and the contribution the Miners' Union has made to that result. Employment in the mines has declined drastically, but the Miners' Union has a strong treasury, wage standards of employed miners are high, and benefit payments to the unemployed have been generous.

The leadership of the Miners' Union appears to have had the perceptivity to understand that coal has been engaged in a fight for its economic life. The competition of oil and gas was inevitably going to destroy a lot of jobs in the mines. The Miners' Union had the choice of seeing these jobs disappear in a bankrupt industry—unable to pay good wages or unemployment benefits. Or, as an alternative, it could cooperate with the able and substantial managements in the industry to make mining an efficient business, with relatively low costs despite high wages.

A writer on unionism, A. H. Raskin, in a recent issue of the Atlantic Monthly, observed that "the miners are rich in memories and in money, poor in members. . . . The industry in which they operate has become an industry of machines, not of men. Employment in the soft-coal field has gone down from 700,000 to fewer than 200,000 in the four decades since World War I."

The important point to be noted is that there was nothing the union could have done to have avoided that decline in employment. "Make-work" rules and other such expedients would not have saved jobs and would have served only to increase further the competitive cost of coal. "Make-work" would have destroyed, certainly, at least as many jobs as mine mechanization has done. And job loss through inefficiency and high costs would have confronted the industry and the union with bankruptcy, on top of disappearance of employment.

The result of the union's hospitality toward technological improvement—reports writer A. H. Raskin in his article—is that the mine price of coal has been kept relatively steady in a period of inflation, and inroads of oil and gas among some large fuel users (notably the utilities) have been checked. The union's leadership has been smart enough, also, to abandon its former practice of frequent strikes—since the utilities "are equipped to convert almost instantaneously from coal to oil or gas, and have made it plain that any irregularity in coal deliveries will cause a permanent shift to these rival sources of energy."

In the railroad business, managements and unions are confronted with problems parallel to those of the coal business (only worse, in that government doesn't put its heavy foot on the scale in behalf of coal's competitors, the way it does for competitors of the railroads). If there has been any action on the part of the railroad unions to parallel the realistic program of the Miners' Union, we've failed to notice it. Indeed, in recent years the practices of some of the railroad unions have indicated no appreciation whatever of the precarious competitive position of the railroads. For example, consider the railroad strikes of the past year or so, over completely trivial issues.

In order to get back on the track that leads to prosperity, and to rising traffic and employment, the railroad industry must have a fair shake from government. It also needs much more realistic internal behavior—on the unions' part as well as on that of managements. There is a lot of inter-railroad rivalry and a lot of inter-union rivalry which add greatly to the difficulties confronting the railroads—which already have their hands full because of the Jim Crow treatment they get from government.

TOO MANY RAILROADS . . . AND UNIONS

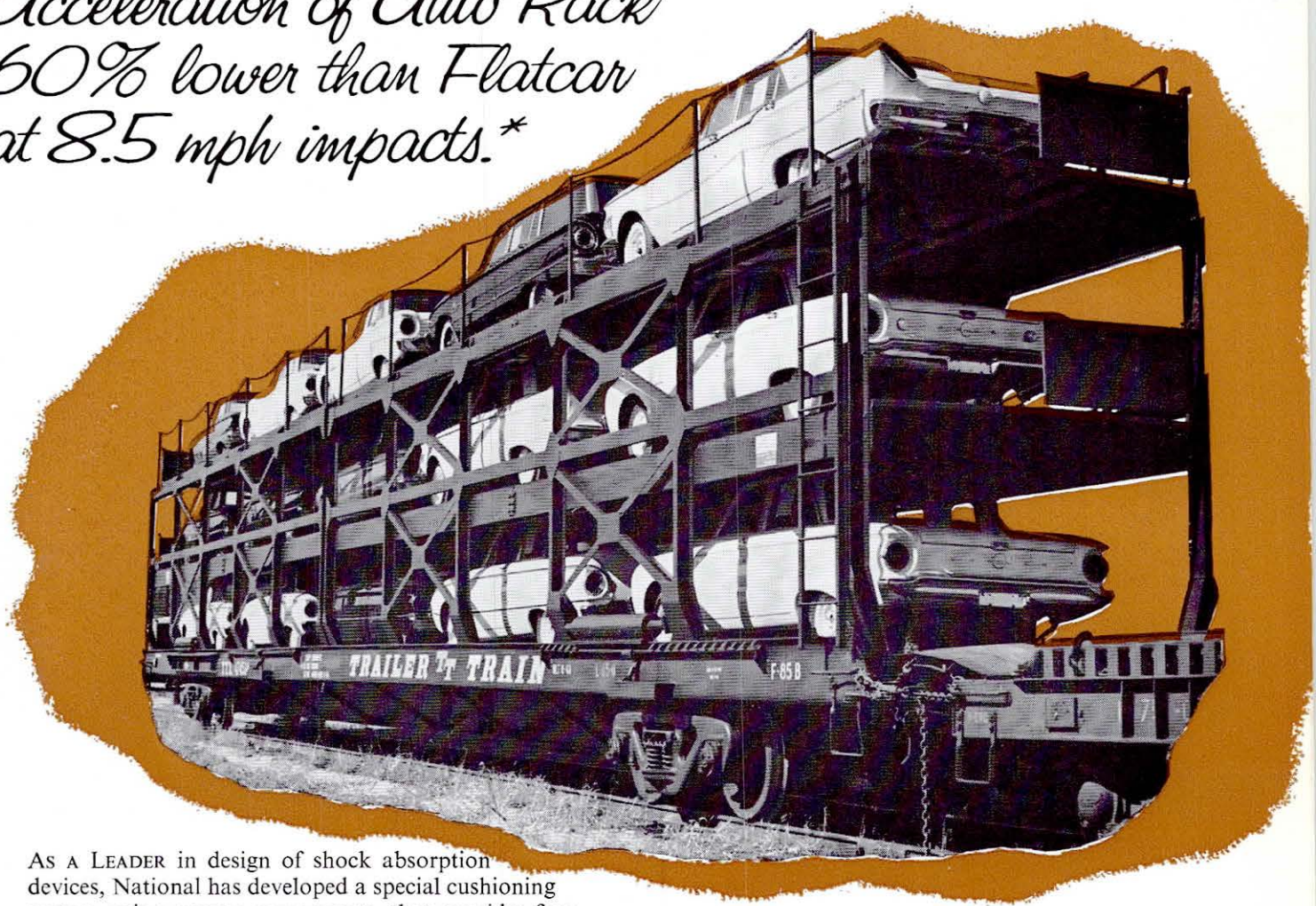
Managements of individual railroads are handicapped by the fact that there are so many railroads—and that each management is employed, not primarily to promote the welfare of the railroad industry as a whole, but to serve the interests of one company. Similarly with the unions—the officers of each are not employed to further the interests of the railway industry or railway labor as a whole. Rather their concern lies mostly, if not entirely, with the immediate welfare of a particular craft.

Railroad managements are seeking, through merger efforts, to correct the disabilities they suffer because there are too many of them. Railroad union leaders should recognize their interest in railroad consolidation, and also that their long-run interest would be best served by merging their unions.

This paper is unable to believe that railroad managements and railroad union leaders are less perceptive than the coal operators and the Miners' Union; or to believe that railroad and union leadership will fail to apply in railroading somewhat the same sort of program that has saved the coal business from extinction. Inherently, railroading has far greater competitive potential as against rival agencies of transportation than coal has against rival fuels.

NATIONAL CUSHIONING SYSTEM FOR AUTOMOBILE RACKS

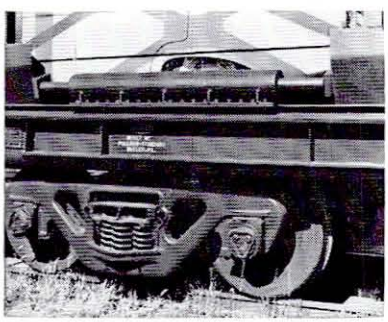
*Acceleration of Auto Rack 60% lower than Flatcar at 8.5 mph impacts.**



AS A LEADER in design of shock absorption devices, National has developed a special cushioning system, using proven components, that provides four important advantages for automobile transportation:

1. Auto rack acceleration 60% lower than freight car body acceleration at 8.5 mph impacts*
2. Positive *re-centering* of rack on car
3. Economy of spring-rubber combination over all-rubber devices
4. Impact tested under actual operating conditions

National Cushioning System-equipped automobile racks are now in service.
Automobile racks present unique problems in cushioning that cannot be solved with conventional shock-absorbing devices. We suggest that you consult National now for full details.



*Auto manufacturer's test data shows that auto rack acceleration was 60 to 65% lower than car body acceleration at 8.5 mph impacts.
National cushioning units for automobile racks consist of four separate tubular housings, one at each corner of the car, with plungers contacting vertical beams of the rack. Two housings at one end contain rubber pads similar to those used in National rubber draft gears; two housings at opposite end each contain four inner and outer steel coil springs of the same type now used in the improved National M-17-A draft gear. A-4631A

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VAPOR STEAM GENERATORS CAN ADD AND SUBTRACT?

in one year, this Vapor installation added $48,520 to profits... by subtracting from steam costs!

here's the record of the first year's operation:

COST OF OPERATION

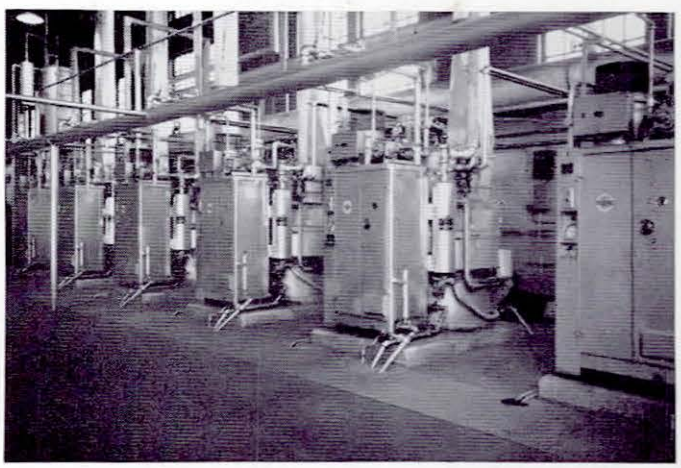
Union Pacific Evanston, Wyoming Reclamation Plant

Cost of Operation and Maintenance, old boilers, May 1957 to April 1958 inclusive	$25,782.01	
Cost of Fuel	$46,905.50	
Total Cost of Operation		$72,687.51
Cost of Operation and Maintenance, new Vapor Boilers, May 1958 to April 1959 inclusive	$ 5,514.19	
Cost of Fuel (Gas), May 1958 to April 1959 inclusive	$18,540.20	
Cost of Fuel (Oil), May 1958 to April 1959 inclusive	$ 112.53	
Total Cost of Operation		$24,166.92
SAVINGS IN COST OF OPERATION		$48,520.59

The Union Pacific converted from coal-fired HRT boilers to these Vapor Water-Tube Boilers. This installation has a single master control to operate all six units. Their completely automatic operation is one reason for their big steam cost saving. For example, old boilers had to be fired up at 4 A.M. to have steam up by 7 A.M., and required two stationary engineers. With this Vapor installation, an automatic clock starts the boilers at 6:30 A.M. and the chill is off the buildings, and steam for processing is ready when the workers arrive at 7 A.M. Boilers are automatically shut down at 4 P.M. when the workday ends.

During the day, the automatic control brings additional units on the line only as steam demands increase. No fuel or steam is wasted when all six boilers are not needed. The control unit rotates the use of the boilers so that each operates about the same length of time. Automatic safety devices permit the boilers to operate completely unattended except for routine maintenance.

Sizes from 10 to 200 hp., pressures from 5 to 300 psi. (Higher pressures are available where required.) Oil, gas or combination fired.



These six Vapor Stationary Boilers replaced old coal-fired, stoker-fed boilers at the Union Pacific's Evanston, Wyoming reclamation plant. First year's savings: $48,520.

For full information write:

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